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BIRMINGHAM
MEDICAL REVIEW:

A QUARTERLY JOURNAL

OF

THE MEDICAL SCIENCES.

OCTOBER, 1880.



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THE
BIRMINGHAM
MEDICAL REVIEW:
A QUARTERLY JOURNAL
OF
THE MEDICAL SCIENCES.

EDITED BY

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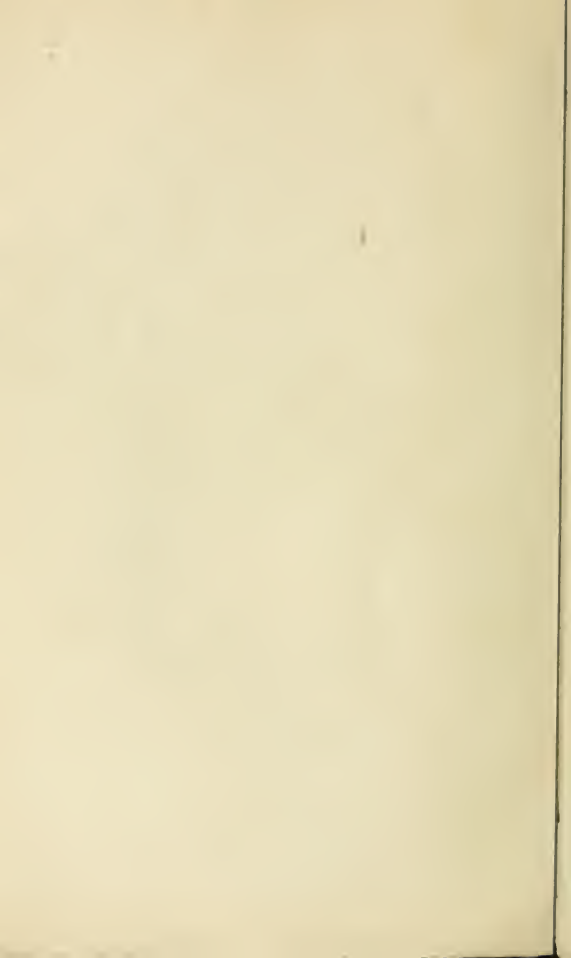
VOL. IX. (NEW SERIES, VOL. III.)

BIRMINGHAM:

CORNISH BROS., NEW STREET:

HALL AND ENGLISH, 71, HIGH STREET

1880.



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THE
BIRMINGHAM MEDICAL REVIEW.

OCTOBER, 1880.

REVIEWS.

DIGITALIS IN HEART DISEASE.

ALTHOUGH the Folk's-glove is referred to in early Saxon writings, it does not appear until about a hundred years ago to have had any place among recognised therapeutic agents, save as an external application. By the common people, however, it was greatly esteemed as a remedy in dropsy, and at length Withering, towards the close of last century, brought it into prominence as a diuretic of much value. He pointed out the clinical uses of digitalis with such clearness, and at the same time distinguished so plainly between the poisonous effects of large doses and the tonic action of smaller quantities, that there is not the slightest excuse for the confusion which has, until quite lately, attended the use of this drug.

Out of the "therapeutic Babel" of the present we are slowly but surely emerging by the path of physiological research. Empiricism is no longer the sole guide to the uses of remedies, and a study of their actions on the healthy organism by means of experiments on the lower animals is now indispensable as a preface to any true conception of their effects in disease. Before proceeding, therefore, to discuss the medicinal uses of digitalis, we must glance briefly at its effects as observed in the pharmacological laboratory.

In small doses, as Traube showed, digitalis causes a rise of arterial blood pressure and a diminution of the pulse rate. The greater blood pressure is in part due to augmentation of the force of the cardiac systole. The increased liberation of energy is without doubt caused by stimulation of the intra-cardiac ganglia. When the connections with the nervous centres were severed by division of the vagi and spinal cord, Dybkowsky and Pelikan, as well as Boehm, found that digitalis still raised the blood pressure. And after removing the heart from the body, Eulenberg and Ehrenhaus observed that the topical application of the drug produced the same effect. Both Boehm and Ackermann are at one also in stating that paralysis of the peripheral part of the vagus by atropia does not hinder this result. It is evident from these facts, that the drug has a direct action upon the heart.

But the increased force of the systole is not the only factor concerned in the rise of pressure. The peripheral arterioles as described by Fothergill, Gourvat, and Ackermann, contract very considerably under the influence of digitalis, and in this way there is a decided increase of resistance to the arterial overflow. The narrowing of the lumen of these vessels is entirely brought about by excitation of the vaso-motor centres. Boehm has proved that after section of the cervical spinal cord, the drug causes no contraction of the arterioles, for the blood pressure rises very slightly, the small increase being merely that due to stimulation of the intrinsic cardiac ganglia.

The slowing of the pulse is no doubt partly the result of the peripheral resistance, produced by the diminished calibre of the arterioles. After the administration of digitalis, nitrite of amyl causes acceleration of the pulse and fall of arterial pressure, resulting from dilatation of the

arterioles. But a more potent cause is the influence of digitalis upon the pneumo-gastric nerves. Just as, according to Weil, the drug excites the inhibitory reflex centres, so it does also with the cardio-inhibitory centres and their paths to the heart. If before its administration the vagi be divided in the neck, digitalis does not lessen the number of the heart beats. After it has been given, and the rate has been lowered, section of these nerves at once accelerates the heart. And further, the vagi are more easily stimulated to inhibitory functions after the use of digitalis. A current so weak as to have no effect upon the vagus without the interference of the drug, will after its exhibition at once stop the heart. We know well that currents too weak to stop the heart will slow it. Digitalis has the same effect as feeble stimulation of the vagus. The main feature is that of the phases of the cardiac revolution it is the diastole which undergoes lengthening.—(B. Foster.)

Digitalis in toxic doses does not concern us at present, but it may be noted that in such quantities the drug causes at first a falling-off in the pulse rate with a rise in pressure, and that as the pressure attains its maximum the pulse rises; this is immediately followed by a steady fall of pressure, and by an alteration of the heart rhythm, the auricular and ventricular systoles no longer maintaining their relationship to each other; the diastole is partial and irregular, and finally the heart stops in systole. At any stage electric excitation of the vagus causes arrest, and even after the ventricles are permanently contracted the still acting auricles obey the inhibitory influence.—(Dybkowsky and Pelikan.)

In digitalis, therefore, we have an agent stimulating the centres of rhythmic discharge, the vaso-motor centres and the inhibitory centres and nerves. The result of this

triple action is that the healthy and necessary over-filling of the arterial system is augmented. The heart expels its blood with greater energy, the contracted arterioles prevent too rapid outflow, and the lengthened diastole allows the blood ample time to return from the periphery to the venous chambers. In consequence the "head of blood" is well sustained, and a condition of arterial hyperæmia is induced. In other words, potential energy is stored up in the arterial system more than sufficient in amount for the continuous transformation into kinetic energy.

These facts point out the rational uses of digitalis. It is the drug for arterial anæmia and venous congestion. We know that venous stasis brings in its train congestion of all the internal organs. The lungs become engorged and œdematous, and declare their condition by symptomatic dyspnœa and bronchorrhœa; the congested kidneys attempt to relieve themselves by transmitting the liquor sanguinis almost unaltered; the alimentary canal, to which the valveless portal system affords an open door, is turgid and coated with mucus, whilst its glandular appendages, labouring under a load of useless blood, cannot perform their functions, and the consequent anorexia, veiled under a false feeling of repletion, steadily deepens. The systemic veins duly follow and general dropsy sets in. In short the digestive organs are as incapable of absorbing and of elaborating nourishment as the vascular system is of transmitting it through the body, and the entire economy starves.

Turning now to matters of more practical interest, we must glance at the general rules which should be borne in mind regarding the uses of digitalis. The relation of the cardiac muscle to the work to be done is really the sole guide. It matters not though this or that valve be

diseased; the consideration of any such fact is beside the mark. Even in hypertrophy it has to be considered that the augmented power may not be sufficient to overcome the obstacle which has given rise to it. Arterial tension must be kept up as near the normal standard as the arteries can bear.

In all cases of loss of cardiac power, digitalis is imperatively demanded. Weakness of the heart walls, from whatever cause, has its tendency to cardiac dilatation, and death from asystole is the goal for which it makes. Simple weakness arises from any cause which lowers the general standard of the entire system. Spanæmia and allied conditions seriously impair the strength of the heart and beget a curable regurgitation at the venous orifices. In such cases arsenic and iron are enough to correct the malady, but a few days treatment with digitalis materially hastens the cure. When from strain the heart has been partially incapacitated from doing its work, the same treatment is of the greatest value, and soon restores the cardiac muscle to perfect soundness. The "irritable heart" of Da Costa appears to be of this nature, and he has found nothing at all to be compared with digitalis in its treatment.

In the adynamic heart of the pyretic state, the use of this agent is of the most eminent value, and while the heart is enabled by it to survive a critical emergency, the temperature which, as we know, varies inversely with the blood pressure, is diminished and kept under control. In these febrile conditions, however, further observation is necessary before we can be absolutely certain as to the exact action of the drug.

A hypothetical objection to the employment of digitalis in weak hearts, is that contraction of the lumen of the arterioles must throw an additional strain upon

the already over-taxed and feeble heart. But this is not a real objection. We know that when the heart is over-distended the vaso-inhibitory centres are called into action, and that the arterioles are thus dilated. Their contraction when the heart is engorged would, no doubt, be dangerous, were it not that the contraction caused by digitalis is accompanied by stimulation of the musculo-motor ganglia of the heart, which is in this way enabled to fulfil the demands made upon it.

In syncope and collapse, the use of digitalis in large doses has been followed by marvellous success. Half drachm doses frequently repeated, or in extreme cases the hypodermic administration of digitalis may be said to have restored patients from the jaws of death, and to have piloted them through the critical period succeeding.

Cardiac dilatation and dropsy arising from organic disease of the heart will be separately considered, and before dealing with valvular lesions, a few words may be said regarding fatty degeneration. Brunton has urged that the use of digitalis in this disease is beset with danger, on account of the liability of the degenerated fibres to rupture under the increased pressure. But this objection is invalid; firstly, because fatty degeneration is a disease exceedingly difficult of exact diagnosis, so that many cases supposed to be labouring under this malady, may in reality suffer from simple dilatation. Such cases would doubtless lose much by the want of digitalis. And in the second place, even fatty degeneration benefits by the use of digitalis. The nourishment of the cardiac muscle is so much improved by this drug, that advanced fatty degeneration cannot fail to be somewhat checked by its use, and the incipient stages of the morbid process may be warded off at least for a time.

Fatty degeneration when secondary to hypertrophy

which has induced arterial atheroma is sometimes spoken of as a "preservative lesion." It no doubt is so, seeing that it reduces the force of the heart's action and tends to minimise the risk of rupture of the diseased vessels, and in any case the administration of any cardiac stimulants in cases of arterial degeneration is only to be undertaken with the greatest caution.

Of the various valvular lesions which affect the heart primarily, those of the mitral valve are the most common, but on physiological grounds the discussion of the treatment of valvular disease is more satisfactorily commenced with affections of the arterial orifices. Patients labouring under aortic disease are happily free from most of the troubles of venous stasis with its accompaniments of dyspnoea and dropsy, which, as we shall see, are so distressing in mitral diseases. Why is this? Simply because there is a strong muscular chamber behind the lamed valve. Its walls are perfectly able to respond to the calls made upon them for further exertion. The recent experiments of Rosenbach show that when the aortic valves have been destroyed artificially, there is not even a momentary fall of the arterial pressure, so that the heart must adapt itself at once to the new state of matters. The left ventricle, then, undergoes a change exactly proportional to the alteration which the valve has suffered. If, therefore, the ventricular walls can so suddenly conform to novel conditions, it is much more natural that they should meet gradual encroachments upon the normal state of the valves by continuously advancing hypertrophy.

In aortic stenosis the question will always be whether there is sufficient hypertrophy to overcome the obstacle. If there is, nothing remains to be done. If there is not, digitalis is the only agent to be used. Patients who are

affected by constriction of the aortic orifice must be watched, and the least symptom of failure of the heart power must be energetically dealt with.

In aortic incompetence enormous hypertrophy of the left ventricle takes place. During diastole, part of the blood regurgitates from the aorta into the left ventricle, so that, according to Pascal's law, the weight of a column of blood as high as from the heart to the temporal arteries, and of the same diameter as the ventricular cavity, is borne by the walls, in addition to the force of the blood pouring into the ventricle from the auricle. Under this double strain, the left ventricle slowly but surely dilates, while at the same time, compensatory hypertrophy accompanies the dilatation. In the majority of cases, the hypertrophy is sufficient to maintain perfect compensation, in others, the hypertrophy always hangs behind the dilatation. In favourable cases, there is perfect compensation until the muscular tissue of the heart gives way. The manner in which this takes place is worthy of note. It occurs when the huge muscular mass has quite outgrown the feeding power of the coronary arteries, as has recently been insisted on by Balfour. The muscle fails not because the arteries are insufficiently flushed with blood on account of valvular incompetence, but because the arteries are too small to supply the exaggerated size of the heart. The coronary arteries are not fed during diastole, but, as once more has been urged by Clifford Allbutt, and by Balfour, during systole, when the transformation of energy requires most the stimulus of the blood current. Every fact goes to disprove Brücke's theory. The mouths of the coronary arteries usually lie above the level of the free edges of the sigmoid valves. — Hyrtl). Even if they were always situated below, the aortic valves, according to Ceradini, would not close them,

for they do not flap against the aortic walls, but form an equilateral triangle with freely eddying blood between their arterial surfaces and the walls of Valsalva's pouches. Then the old objection, that the systolic contraction of the heart would occlude the arteries, is quite disproved by Gaskell, who found that even tetanus hastens the blood flow in muscles. And in the last place, we may note that it is an undeniable fact, that the blood on section of the coronary arteries flows in systolic jets. The coronary arteries, like those of the rest of the body, take part in the systolic increase of pressure, and there is nothing in aortic incompetence to make them at all relatively worse off than the general systemic arteries. In aortic incompetence, therefore, there is, as a rule, no need for any drug. As a matter of fact, latent cases of this valvular affection are more common than latent examples of any other. It is when a heavy strain has been thrown upon the heart in any way that the disease reveals itself by symptoms; if the patient leads an easy life no symptoms are shewn until the heart is beginning at last to succumb. In either case, matters are changed and the heart requires the stimulus of digitalis to tide over the crisis in the one case, to sustain its flagging powers a little longer in the other.

Both aortic stenosis and aortic incompetence, or what is much more common, aortic stenosis and incompetence conjoined, only require the aid afforded by digitalis when the heart is unequal to the work required of it, and in any case, symptoms are really of much more importance than signs.

Mitral disease is very different. The curable mitral regurgitation of spanæmia, and similar conditions, has been referred to, and in this place organic mitral disease alone falls to be considered. It must be taken up as a

whole. There is no reason for dissociating stenosis from incompetence: their tendencies are the same. Auricular dilatation, stasis of the pulmonary circulation, increased pressure within the pulmonary artery, dilatation of the right ventricle, tricuspid incompetence and venous congestion, give such symptoms as extreme irregularity of action of the heart, great dyspnoea, constant dyspepsia, albuminuria, and dropsy, while the whole system is in a state of cyanotic anæmia. The reason for this state of venous hyperæmia is no doubt the fact that behind the mitral valve there is no strong muscular chamber in immediate connection with it which might resist the regurgitation. The tricuspid incompetence is for a time of considerable value to the overloaded lungs, and saves them at the expense of the systemic veins, but it in the end only serves to empty the blood more and more out of the arteries into the veins, and so tends to lower the arterial tension further.

Art is in mitral disease followed by the most notable success. Digitalis controls the irregular action and prevents the dissipation of energy, when useless, by slowing the heart; the surcharged pulmonary veins are allowed to relieve themselves by the proper channel, and while strengthening the systole the action of the drug tends to keep the muscular surroundings of the mitral orifice more tense and unyielding. At the same time the increased power of the systole drives more blood relatively into the open aorta than through the contracted mitral orifice, so that a few days' treatment in a great degree reduces the venous congestion and raises the arterial pressure. The pulmonary circulation, and with it the aeration of the blood, is stimulated, the gastric and other digestive troubles are relieved, the albuminuria diminishes, and the dropsy disappears; in short, the patient looks

and feels a very different being from the gasping and dropsical invalid of the time anterior to treatment.

Tricuspid disease resolves itself clinically into regurgitation caused by mitral disease and by chronic lung affections. No doubt rare cases of stenosis are on record, and there is a small percentage of regurgitation caused by other conditions, but neither of these facts materially modifies the generalisation. In treating tricuspid incompetence it is to be borne in mind that there is no strong muscular chamber upon which we can act by means of digitalis. The drug does act favourably upon the right ventricle by tending to diminish its cavity and contract the muscular walls around the orifice, but its chief benefit is by stimulating the systemic circulation as above spoken of in connection with mitral disease. When the tricuspid regurgitation is considerable, brisk purgation should be added to the treatment by digitalis, and will be found a very material aid. If the tricuspid affection be secondary to lung disease, it is before all things necessary to do everything to relieve the primary lesion, and the addition of digitalis is of great advantage to any such measures. But it must not be forgotten at any time that tricuspid regurgitation is of vast service as a safety-valve, by means of which the lungs escape many accidents, such as congestion and œdema, to which they are exposed. It must, therefore, in many cases at least be regarded as symptomatic.

It of course does not fall within the province of this article to offer any remarks upon treatment of heart disease in general, but we must add that in all cases, it is necessary to aid the action of digitalis by the use of amplenourishment. Upon this topic, von Dusch lays very great stress. When there is a notable tendency to anæmia, iron or arsenic, or both should be administered along with digitalis.

With regard to the amount of the drug which should be given, it can only be said that the dose entirely depends upon the requirements of the case. When the heart is failing rapidly, half drachm or even drachm doses of the tincture are required at frequent intervals, or the hypodermic injection of the fiftieth of a grain of digitalis may at once be resorted to, and followed up by full doses of the tincture. Under firm treatment such as this, it is most gratifying to find that cases of acute failure and dilatation of the heart are so frequently in a few days restored to a state of comparative soundness. The heart, even when fatally injured, has a large store of reserve force upon which it can draw when necessity calls. We have already referred to the experiments of Rosenbach, as showing how admirably the heart adapts itself to altered conditions. Now even when on the brink of total disorganisation, the heart attempts to overcome any untoward conditions. If it is equal to the task it surmounts the difficulty, but if the strain proves too severe it must succumb. But if we step in at this juncture and assist the enfeebled heart over the difficulty, that organ shows a wonderful power of recovery, and will afterwards attain to a state of soundness, proportional to the condition of the heart muscle.

In all the sudden emergencies of the heart, large doses are called for. It is far otherwise, however, in chronic diseases of the heart. In these it is only when some additional strain is thrown upon the heart, or when the period of failure of compensation sets in that there is any need of heroic measures at all. In aortic disease during the greater part of its course, neither this nor any other drug is necessary, unless it be to allay the frequently accompanying pain. It is, however, absolutely essential to watch the progress of aortic disease, in order to be

ready to act with promptitude when occasion calls. In mitral disease on the other hand, the continuous use of digitalis is indicated in order to counteract the tendency to irregular and feeble action with its sequels of pulmonary and systemic troubles. There is no danger of what is called the "cumulative action" of digitalis, unless it be administered in larger quantities than the excretory system can get rid of, a risk which must be admitted to be common to all drugs. Constitutional weakness of the heart must be treated in the same way by means of small tonic doses continued for a long period.

The safest test by which we can judge of the condition of the circulation when under the influence of digitalis is the quantity of urine passed. Brunton and others have pointed out the increase of this excretion which digitalis causes by augmenting arterial tension, and by means of this fact, we can accurately gauge the condition of the heart and arteries. As long as the amount of urine is in excess of that passed before the digitalis was administered, all is well, but when it begins to fail, we know that the heart is approaching the state of tonic spasm induced by poisonous doses of the drug. When the urine shows any diminution, therefore, the use of digitalis should be suspended for a few days. It is a somewhat singular and as yet inexplicable fact, that the greatest amount of diuresis caused by this drug always occurs just after stopping its use. So much is this the case, that certain physicians invariably attack cardiac dropsy by exhibiting large doses for a few days and then ceasing to administer it.

Finally we would once more lay stress upon the fact that the use of digitalis can only be truly based upon the comparative states of the heart and the vessels—in other words the relation of that organ to the work it has

to do. Whether this or that valve be diseased is a consideration quite worthless in comparison with a correct estimate of this relationship. If the heart can do its work thoroughly all is for the time well. If it cannot it must be aided, and for that purpose the most useful drug we at present know is digitalis.

GEORGE A. GIBSON.

PRACTICAL LITHOTOMY AND LITHOTRITY.*

Sir Henry Thompson is the author of a goodly number of the not too numerous monographs in surgery which are both agreeable to read and eminently practical. His clinical lectures on Diseases of the Urinary Organs is, for good reasons, the most popular work, and has reached its fifth edition. It contains, expressed in an interesting and conversational manner, a summary of his views, which are stated at greater length in his other works. In this work he gives, in a few luminous words, the results of an unusual experience in stricture of the urethra, hypertrophy of the prostate gland, retention of urine, stone in the bladder, lithotrity, lithotomy in men, women and children, cystitis and prostatitis, and hæmaturia. In the work before us he treats much more at length the subjects of practical lithotomy and lithotrity. On lithotrity he speaks with great weight—the weight of a man who has treated upwards of six hundred cases with remarkably successful results.

We propose here to briefly enumerate the more important points which the author believes the lithotritist should constantly keep in view.

* "Practical Lithotomy and Lithotrity." By Sir Henry Thompson, F.R.C.S. Third Edition. London: J. & A. Churchill.

In a certain number of cases it is well to accustom the urethra to the passage of instruments in order that discomfort and the risk of hæmorrhage may be diminished. This suggestion is valuable, but the author, himself, would probably admit that the growing tendency to use ether in lithotrixy in some degree lessens its importance.

Of unquestionable value is the direction to avoid disturbing the bladder with sounds, or the injection of water just before the lithotrite is used. When a stone has once being *heard* (especially by more persons than one), it will be found in the bladder when needful without further use of the sound.

When the lithotrite has been gently and slowly introduced into the bladder, the blades should be carried at least to the centre of the cavity before they are separated. Every movement should be performed with as little contact as possible with the vesical walls.

The long axis of the instrument should be kept in the middle line of the body. Jerks, vibrations, and lateral movements should be carefully avoided.

A large stone is usually found near the neck of the bladder, and when any difficulty is found in seizing it it is because the male blade is behind the stone. To bring the male blade between the stone and the neck of the bladder without injury to the latter requires no little delicacy of manipulation.

When the stone is caught some rotatory movement will make it clear that the mucous membrane is not also caught by the instrument.

One of the most useful facts to remember in lithotrixy is this: fragment after fragment will be found in the same portion of the bladder, and fragment after fragment may be caught and crushed with singularly limited movement of the lithotrite.

The instrument should be freed from too much *débris* before it is removed. If any difficulty is felt in withdrawing the blades through the neck of the bladder, they should be carried back into its cavity and unloaded as far as is needful. The instrument should be withdrawn very slowly.

After a sitting the patient should retain the horizontal posture for two or three days, and empty his bladder while lying on his back. This rule is of special importance where the aspirator is not used, or where if used, there is reason to believe some *débris* remains in the bladder.

Most readers will turn with interest to the chapter on lithotritry at a single sitting—the method so strongly advocated by Professor Bigelow. Before the publication of Bigelow's views Sir Henry Thompson had been resorting more frequently to the use of ether, and crushing more freely at each sitting, especially where the fragments of the first sittings gave rise to marked vesical trouble. He says of Bigelow's method: "This was a bold, and I think it may be considered a happy idea." He considers, however, that Bigelow's instruments are unnecessarily large and clumsy. We quite agree with him in the statement that the vast majority of stones may be crushed by the lithotrites now (and previously) chiefly used in this country. He contends that the one-sitting method, although of great value, is not without risks, and that it requires more experienced and skilful hands than the older method. He is not unreasonably amused that some enthusiasts of the new method should use gigantic instruments for the removal of little stones. It can never be necessary to use a lithotrite stronger than the one with a keel-shaped male blade which is now made by most surgical instrument makers, and rarely necessary to use an evacuating tube of larger size than number 17 or 18.

NEW MATERIALS

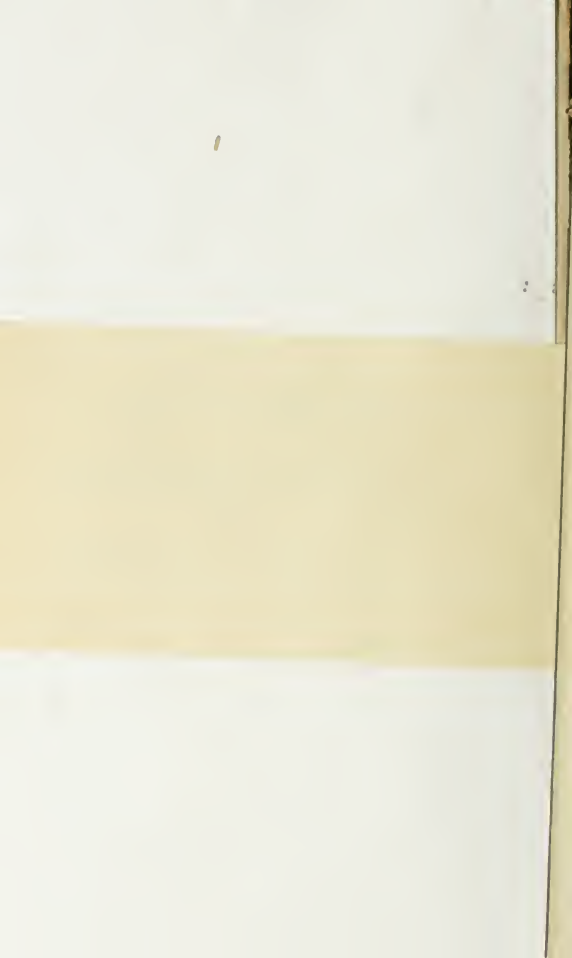
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LESSONS IN GYNECOLOGY.*

The mere title of this book as given above is an indication of the advance which has been made in America in the special department of which the book treats. Dr. Goodell is "Professor of Clinical Gynecology," in a distinguished American university; in fact, he holds an appointment which does not exist in England, nor in France, nor even in Germany. In our own country, the great field of gynecology is relegated to a few lectures given by the Professors of Midwifery, or the Obstetric Physicians to hospitals, and a purely gynecological teaching appointment does not exist. The great merits of this book are undoubtedly, to a very large extent, the outcome of this method of subdivision adopted in America, to a much larger extent even than that indicated in the title. We wish we could point to a single book published on the special diseases of women on this side of the Atlantic, containing as much evidence of sound good work, combined with the facility of utterance which teaching alone can give. If we take two examples of modern English books, West and Duncan's "Diseases of Women" and Spencer Wells' "Diseases of the Ovaries," we shall see examples of the two extremes of English work and the evils of its method.

In the former book, there is a care and fulness of explanation which mark the practised and accomplished teachers, but there is an utter absence of evidence of surgical experience, which alone can form the groundwork of authoritative utterances in gynecology. In Mr. Wells' work on the other hand, we have a dry narration of the

* "Lessons in Gynecology." By Wm. Goodell, M.D., &c., Professor of Clinical Gynecology in the University of Pennsylvania. London: Bullien, Undall, and Cox.

conclusions of a brilliant and unexampled personal experience, and a great want of that analytical power and force of explanation which mark the teacher.

It is almost a national misfortune that a chair of "Clinical Gynecology" was not created at some of the London schools for Mr. Wells, and that he should thereby have been compelled to collate and expound the enormous experience he has had, not in ovariectomy only, but in every branch of his specialty. But we suppose that such a step would have been sufficiently heterodox to have portended the end of the medical world—in the metropolis.

Turning to the book before us, we find it contains thirty-three lessons, or clinical lectures, delivered in a clear and familiar style, but showing in every line the evidence of clear personal observation, and wide experience. In not one of the lessons can we point to serious omissions, though concerning some of the conclusions there is, of course, fair room for differences of opinion. The thirty-three lectures do not pretend to deal with the whole work of the gynecologist, but it would be difficult to add substantially to almost any one of the lessons anything which did not merely affect a view different from that experienced by the author.

We have gone more carefully over the book than is usual in reviewing, and have ended its perusal with the feeling that not a single chapter should have been passed over, and that in many the author shews that he is in advance of our English authors. This is particularly the case in the chapters relating to uterine tumours and diseases of the ovaries, more particularly those conditions which involve the treatment of some functional disease of woman by spaying, or oophorectomy, and it is to these chapters that our remarks in this book will be confined.

Only one serious fault can here be found, and it is the retention of the old fashioned and meaningless term "fibroid," used to signify what is now universally designated "myoma." Concerning this class of tumour, Dr. Goodell gives us a most interesting and curious piece of information, that these tumours are very common in black and mulatto women, far more common than in white women ; that they are common in women of colour even under twenty years of age, and that ovarian tumours and uterine cancer are correspondingly rare in the same class. This observation may yet prove of immense importance in revealing the etiology of all these diseases.

He falls into a curious error, however, when he says that the arrangement of the muscle cells of these myomatous growths is a "purposeless jumble." To the untrained eye, a section of a myoma certainly looks like this, but to the experienced histologist, more particularly to any one conversant with Dr. Bell Pettigrew's marvellous disentanglement of the fibres of the heart and uterus, it is clear, without the yet required demonstration, that these tumours grow upon a definite plan and with an evident purpose of arrangement, but what that is, no one yet has patiently investigated. Dr. Goodell seems persuaded that the theory of uterine congestion is the fittest explanation of their growth ; but he forgets that the commonest form of uterine congestion—chronic metritis and subinvolution—are infinitely more common than myomata, and there seems no clear determination towards their growth out of subinvolution. "Further corroboration of the congestion theory is gained," he states, "by the circumstance that fibroids rarely appear before the age of thirty, and never before puberty," forgetting here the information he has just given concerning negresses, and the evident indication that some

more specific cause of growth than passive or active congestion, is clearly indicated by the racial differences he has recorded.

Another pathological error he most undoubtedly commits, when he states that such tumours never degenerate into cancer, and very rarely grow rapidly. They most undoubtedly do sometimes take a malignant growth, and the variety which has been described as the "œdematous myoma," grows with a rapidity which equals the average growth rate of ovarian tumours.

The clinical history, and the varieties of myoma, are given with singular clearness and precision, but the interest of the chapter centres in the advice given for their treatment. He points out that the nearer the patient is to the critical period of life, the more favourable is the prognosis; but, he continues, "remember this important fact: "The menses will linger on beyond the usual time. These tumours keep up the ovarian nismus, and greatly prolong the menstrual period of life."

Of the therapeutic treatment of these tumours, especially of their most serious symptom—hæmorrhage—he gives a full description, but he speaks neither emphatically nor encouragingly of any of its means, and here our experience is quite in accord with that of Dr. Goodell.

For the surgical treatment he recommends, first of all, the dilatation of the uterine canal either by tent or incision, both of which are occasionally successful in arresting the menorrhagia of a myoma, at least for a time. Like everyone else, he can give no reasonable explanation of the exceptional success of this treatment, and he has experienced its frequent failure and its risks.

Of the more grave proceeding for the treatment of these cases, Dr. Goodell speaks at length, and, it seems to us, with great wisdom. The method of immediate enucle-

ation, as advanced by Dr. Marion Sims, gives good results when it can be accomplished, but this result is by no means common. The secondary enucleation, that is enucleation by opening the capsule and allowing of gradual extrusion of the tumour, has had such bad results that it is very properly being discarded. "In some otherwise hopeless cases, the womb, together with its appendages, has been removed, but the mortality has been frightful." He quotes from Pozzi the display of 119 cases, of which 77 were fatal, a result sufficient to condemn the operation, even if it were all. But it is not. "There is good reason to believe that, upon an honest count of the entire number of such operations, it would be seen that but a small proportion of them have ever been brought before the profession; and as for results, it is probably not unjust to suppose that at least eight out of every ten such cases have proved fatal." "The uterus," writes Dr. Thomas Keith, "has been pretty frequently removed in Scotland, but all the cases proved fatal with the exception of my solitary three. I need hardly say that the fatal cases are never published."

"With such a frightful mortality extirpation of the womb for fibroid tumour should never be resorted to except as an extreme measure; and, in my opinion, not until every other known means, including spaying, has previously been tried." With this opinion we most fully concur, and have every confidence that in oöphorectomy we have the most efficient means of dealing with all such cases, save a very few.

Concerning the method of the performance of oöphorectomy, Dr. Goodell gives the preference to the vaginal method. With this we cannot agree, for many reasons, but chiefly because Dr. Goodell himself, beginning the operation in this way, has been obliged to finish it by abdominal section.

His argument in favour of the former method is chiefly statistical, but the argument is now turned all the other way, by the results obtained by Hegar and Lawson Tait. It is somewhat curious that in this operation the author has given up the use of Lister's spray as being detrimental.

Dr. Goodell draws attention to the interesting fact that there are some cases in which removal of both ovaries fails to arrest menstruation, and gives a table of 143 cases, in which 16 continued their menstruation for some months with perfect regularity, and 10 did so for some months irregularly. The histories of the 16 cases are not given for a sufficiently extended period to make it convincing that the operation failed in them, and a further and more careful investigation of this important feature is demanded. The explanation of it is most probably the existence of accessory ovaries, as described by Kocks and Beigel.

Of this new operation the author sums up his experience as follows:—"The operation of spaying is yet in its infancy, and time is needed to develop its resources. But I cannot help feeling, that in carefully selected cases, it will prove the sole means for curing many mental and physical disorders of menstrual life which have hitherto baffled our science, and are a standing opprobrium to our profession."

He deals very fairly with the evident objections which may be urged against it, and shows, we think, conclusively, that it does not unsex those subjected to it, in their marital relations; and, of course, it does not do so as far as maternity is concerned, for the very reason of its performance, the disease for which it is done, has done so already.

THE BILE, JAUNDICE, AND BILIOUS DISEASES.*

Considering from the title of this book that it deals with a fluid, a symptom, and the diseases of a fluid, one wonders how it could have reached such large proportions, and after a careful perusal of its contents, we confess that we think it might with advantage have been compressed into a smaller space. In his preface the author says :—“In the last chapter I have specially considered the meaning of ‘bilious diseases’; and I have proposed that the word ‘bilious’ should no longer be used as an adjective to diseases.” Why then did he use the above title for his book?

Beginning with the chemistry of the bile, the author describes under this heading the bile-acids, pigments, fats, salts, and other constituents of this fluid. The physical and chemical appearances of the bile, the history of its physiology, its sources, its amount in health and influenced by agents of different kinds, its office, the action of drugs upon its secretion, and its physiological action are all fully described. Next follow the etymology, history, and causes of jaundice, the symptoms, complications and morbid anatomy of that condition. Then we have the diagnosis and prognosis of jaundice, and its treatment. Much more rational would it have been to have considered first the various morbid conditions which cause jaundice, and then to have given their treatment, than to have considered the treatment of a symptom. *Icterus simplex*, *epidemicus gravis*—under which last acute yellow atrophy is placed—are treated of

* “The Bile, Jaundice, and Bilious Diseases.” By J. Wickham Legg. London : H. K. Lewis, pp. 719, 8vo.

in chapter xix. In chapter xx. we have the symptoms of acute yellow atrophy, its "prodroma," its nervous symptoms, the hæmorrhagic diathesis which accompanies it, and other complications fully described. The next two chapters deal with its morbid anatomy and pathology, its diagnosis, prognosis, and treatment. From page 546 onward, yellow fever, the jaundice from phosphorus poisoning, from poisoning by arsenic, antimony, &c., icterus febrilis, syphiliticus, "a venenis," (*e.g.*, from viper bites, icterus gravidarum, embryonum, neonatorum, infantum, and menstrualis, are discussed. The last chapter is an attack on the term bilious diseases. There is also a copious bibliography, principally of books and papers on acute yellow atrophy.

Evidences of laborious research into the bibliography of the subject under discussion are abundant throughout the book, and in most cases one can see that the author has consulted the original papers. His account of the physiological chemistry of the bile-pigments is especially complete, but in some cases he has not availed himself of the latest contributions to this subject; for instance, we miss any notice of Hoppe-Seyler's discovery, that hæmatin by the action of tin and hydrochloric acid yields hydrobilirubin (= urobilin).

In a review of Dr. Wickham Legg's book, which appeared in the London Medical Record, we notice the following statement, that, "opinions appear to be maturing," . . . "for the non-identity of bile pigment and hæmoglobin." Now everybody *knows* that hæmoglobin is as different from bilinubin as light from darkness; and Dr. Legg does not discuss such a question. What he does discuss is the identity or non-identity of bilinubin and hæmatoidin—the latter being undoubtedly a derivative of hæmoglobin. He gives the reasons upon which he

bases his opinion that their identity has not been proved, but he adduces no experiments of his own in support of that view. In our opinion his premises do not justify his conclusion ; and the opposite has been accepted by Hoppe-Seyler, Kühne, Jaffe, Hermann, and many excellent physiological chemists, at home and abroad. Mr. Sorby, as Dr. Legg himself remarks, has called attention to the fact that the bile of snails gives a spectrum like hæmatin ; if this be so the matter is nearly settled.

It is a curious fact that the physiological chemists of the present day spend more time in attacking each others *theories* than would be amply sufficient to get together *facts* sufficient to completely settle such points as that under discussion ; the reagents used by some of them are quite sufficient to destroy the last traces of many easily changed organic bodies of which they are in search.

In page 129 there is a useful summary of our knowledge of the physiology of bile. Here we are told that it is still uncertain whether "the liver be a mere filter, or if it secrete the bile itself, although the general belief of physiologists is in favour of the latter."

Again, "Of late years, a belief in a kind of circulation of the bile has much prevailed ; that is, that the bile is secreted by the liver, passed into the intestines, absorbed by the intestines, passed into the blood, and again brought back by the blood to the liver to be again secreted."

"The bile-acids must be derived from some nitrogenous bodies, and it is, therefore, probable enough, that they come from the albuminous compounds of the system, though whether the breaking down of the tissues, or the splitting up of the peptones from the food furnish the bile-acids, is not known."

As to the amount of bile secreted in health, it would appear from the few cases in which biliary fistulæ have occurred in man, that it varied from 7 to 22 ounces in 24 hours.

The author thinks that it is doubtful whether ingestion of food is followed by an increased secretion of bile within an hour or two in man, and he thinks this may be explained "by the frequency with which meals are taken by man, by which the liver is being continually excited, and so feels less the stimulus of any one meal."

"No definite relation has yet been discovered between the kind and amount of food, and the amount of bile."

"No nervous influence has yet been found directly to affect the secretion of bile. The diabetic puncture is followed by no change." "Irritation of the papilla in the duodenum by an acid is followed by a rush of bile into the duodenum. The acid change is, therefore, probably the natural irritant of the gall-bladder and ducts."

"To what purpose, then, serves the bile?" asks the author in p. 155, and his reply is worth quoting. "It cannot be looked upon solely as an excrement, for it has been seen what deep changes in nutrition follow its diversion from the body. There is no evidence that it is necessary for the completion of the process of digestion in the stomach or intestines; indeed it may be said by some physiologists that it does harm to the process in either viscus. The view that it acts as a sort of natural purge has little against it; but at the same time, there is but little in its favour. As to the power of the bile in arresting putrefaction, it would seem that it must be small, if, as soon as it arrives in the intestine, it begins itself to undergo putrefactive changes. The view that the bile neutralise the acid of the chyme must fall with the establishment of the fact that the bile is not alkaline,

but neutral in reaction. The only office which remains to it is that of emulsifying fats, a property known to the Greeks 2200 years ago, and of changing starch into sugar."

The chapter which treats of the action of drugs on the secretion of bile is a useful summary of the facts which the experiments of Scott, Röhrig, Rutherford, Laffter, Mosler, and others have brought to light as to the action of cholagogues. Eunonymin and iridin are shown to be (as most practitioners now know,) active cholagogues. Dr. Legg points out that the want of colour of fæces is not necessarily due to a decrease in the secretion of bile, as it may be due to the absorption of bile after it has passed into the intestine. Chemical analysis is, in his opinion, the only trustworthy guide in judging of the presence or absence of bile in the fæces. *Bismuthum*

The chapter which treats of the action of the bile-acids on the heart is excellent, and the views of various experimenters are clearly and accurately given.

The description of xanthelasma is full and complete, and the coloured plates illustrating this condition of the skin will be found useful by practitioners.

In the chapter which treats of the prognosis of jaundice, we are reminded that "the practitioner can never feel quite happy even when attending the simplest case of jaundice, as the beginning of acute yellow atrophy cannot in the present state of knowledge be distinguished from simple jaundice."

The chapters which treat of acute yellow atrophy are, perhaps, the best in the book. We regret that want of space prevents our noticing some of the very valuable facts which are collected in these chapters, but we would advise every practitioner to read them.

The immense number of bibliographical references in this book will make it a valuable addition to the library of every educated practitioner.

INJURIES AND DISEASES OF THE LYMPHATIC SYSTEM.*

In the preface, we are informed that the present monograph is an endeavour to supply a gap in English Medical Literature, for with the exception of Dr. Curnow's published lectures on the Lymphatic System, this important branch of the human organisation has received but scant consideration at the hands of English authors. The volume offered us by Mr. Bradley is not bulky, consisting of some 144 pages of fair sized print, and quotations and references to other writers are freely interspersed. Added to this, is a racy mode of description peculiar to the writer; so perusal of the book does not weary the reader.

First of all, the general anatomy of the lymphatic system as now generally accepted is given; this is followed by an article upon lymphorrhœa and lymphangioma, the former being usually due to direct injuries of the lymph vessels, but sometimes merely to dilatation of the same. An illustrative case of the dilatation variety, which was seen in the Manchester Infirmary, is mentioned. The patient, aged 45, suffering from phthisis, was covered with some 250 vesicles on the skin of the abdomen, from which exuded an irregular amount of fluid, sometimes serous, at others milky, especially when food had been taken. The quantity so secreted in 24 hours amounted to some pints. There was no glandular affection. The *post-mortem* showed the lymph plexuses of the affected skin to be hypertrophied. In the chapter entitled

* "Injuries and Diseases of the Lymphatic System." By S. Messenger Bradley, F.R.C.S., Surgeon to the Manchester Royal Infirmary, Lecturer on Practical Surgery, Owen's College Medical Department. London: J. and A. Churchill. Manchester: J. E. Cornish, 1879.

lymphatic œdema, which is the most instructive in the book, the subject of elephantiasis is fully discussed, and mention is made of the *filaria sanguinis*, shown by Dr. Lewis to be frequently present in the blood of patients with this disease. In India, the mosquito is said to be often the host of this parasite. Concerning treatment, after stating the methods of incision, bandaging, etc., the opinion of Sir J. Fayrer, unfavourable to ligation of the femoral artery, when the lower limb is the seat of affection, is quoted. The author himself seems to incline to compression rather than to actual ligature of the artery. Lymphangitis and adenitis are also noticed. The first named is considered to be divisible into simple and septic, not, however, we opine, a good classification, for it is probable that inflammation of the lymphatics is primarily due to putrefactive absorption.

Lymphadenosis (more commonly known as Hodgkin's disease) is defined as "a disease primarily of the lymphatic system, characterised by the enlargement of the lymphatic glands; sometimes of one or more groups, sometimes of all the glands in the body. There is a marked absence of tendency to suppuration even when the glands attain a great size. Anœmia is always present. The spleen is generally enlarged. There is no leucocythæmia, but the number of red corpuscles is often diminished."

The disease is stated to be three times more common in men than women; but Mr. Bradley does not regard the prognosis so unfavourably as other writers; two cases of recovery occurring in his own practice are recorded.

Speaking of the lymphatic contagion in cancer, the author believes in an hereditary dyscrasia, to which he suggests the name of "epitheliosis," should be applied.

Finally we have an appendix with a *résumé* of 88 cases of giant growth dependent upon lymph stasis; these have

been epitomised from Busey's work on the "Congenital Occlusion and Dilatation of Lymph Channels."

Before bringing the notice to a close, we must add our regret, a regret universally felt, at the comparatively early decease of the author of this book. An able operator, clear and fluent both as a writer and speaker, surgical science has, by the death of Mr. Messenger Bradley, sustained a loss it could ill afford.

THE ORTHOPRAGMS OF THE SPINE.*

IN a work of 149 pages of good sized print, those diseases of the vertebral column requiring the help of the instrument maker are regarded from a mechanical point of view, and the best appliances to remedy such deformities are clearly described. After mentioning the formation of the natural spine, Mr. Bigg devotes his second chapter to the consideration of the various curvatures which denote an unnatural spine. The following sub-division is adopted.

1. Curvature of Extrinsic Origin. This signifies a structurally and a functionally healthy spinal column, yet from abnormal circumstances, for instance, hip disease, loss or paralysis of a limb, a consequent change in the curves of the vertebræ is brought about.

2. Curvature of Intrinsic Origin. This depends upon disorganisation of either the musculo-nervous or osseoligamentous factors of the vertebral column.

This classification is thought by the author to be more reasonable and more comprehensive than any which distinguishes the curves by such names as cervical,

* "The Orthopragms of the Spine" An Essay on the Curative Mechanisms Applicable to Spinal Curvature. By Robert Heather Bigg, Assoc. Inst., C.E. London: J. & A. Churchill, New Burlington Street. 1880.

lumbar, antero-posterior, rotatory, etc., as these are based upon the results, not the causes of the deformity.

The derangement of musculo-nervous elements leads to scoliosis or lateral curvature. The cause of this is stated to be debility or atonicity. It is admitted that the convexity of the upper or dorsal curve in such instances is towards the right scapula, and this in 95 per cent. of patients, but no explanation of the *raison d'être* is offered, "the fact remains as inexplicable as the one-sidedness of a flounder's face."

The last two chapters are devoted to the treatment of angular and lateral curvatures, by means of orthopragms, or "complimentary mechanism." We are informed that orthopragms may be divided into passive, under which head are placed those supports which impart their own properties to the regions to which they are applied; and secondly, the active variety, which is an instrument with two distinct and firm holds at its extremities, the intermediate part being the working agent. An example of the former is a well-fitting leather case, which the author thinks preferable for Pott's curvature. For this disease of the osseo-ligamentous structures, the writer speaks highly also of crutches arising from a metallic pelvic base, and supporting the shoulders beneath the axillæ; the spine is furthermore supported by two spring metal bands passing from the base alongside the vertebræ to join the crutches by means of other light but rigid ones.

The plaster of Paris cases, as introduced by Sayre, meet with small praise, and but little mercy at Mr. Bigg's hands. In the first place the suspension is regarded as useless; to this we agree, except as a matter of convenience for applying the bandages; then, the case cannot be made to fit the spine accurately owing to the pads and Jersey it is necessary to use. The material of which

the case is composed is harsh and heavy, and much is made of the uncleanness of the whole apparatus. The following sentence may be taken as the pith of our author's condemnation:—"The rich, therefore, barely benefit by the introduction of plaster as the material of a spinal splint so much as the needy do, and so it must be esteemed that the great advantage and value of that introduction is that it is a poor one, or more correctly, a pauper one." The felt cases are thought to be a little better than the plaster ones, but these, also, are condemned by faint praise.

Such opinions of Mr. Bigg, we are sure, will not be endorsed by hospital surgeons as a body, and after all they are the best judges, for to them Sayre's cases are now almost indispensable for relieving many patients afflicted with vertebral caries, and innumerable lives have doubtless been saved, or at least prolonged, in instances where the patient could not afford an expensive orthopraxis supplied by the surgical instrument maker. We say nothing of the saving of hospital funds which plaster of Paris cases have effected.

For patients with lateral curvature, a support is described consisting of a metallic pelvic circle with two metal bands, ascending on each side of the spine to the top, where they join in an arch. Spring wire horizontal branches are attached to these back bands which passing under the axilla of the corresponding side, terminate in front in a plate, which presses against the top of each shoulder. An elastic abdominal belt completes the apparatus. This instrument we are told "is now frequently used by the weaker sex as a mere preventive against fatigue or back ache." Actresses, and ladies who ride much, or are compelled to sit upright in a carriage for long together, are stated to be the chief patronesses of the support.

Perhaps in the next generation an orthopraxm will take its place in the every day attire of women, for it is impossible to conjecture the vagaries of fashion. For the benefit of those who are not professional readers, metaphors are unsparingly sprinkled throughout the pages, and the bulk of the book is considerably increased thereby.

It is almost impossible in a compilation of this kind to present the material in a manner that will sustain the interest of the reader throughout, but for those to whom the treatment of spinal curvatures, by means of instrumental supports, is a subject of consideration, a careful perusal of Mr. Heather Bigg's book, will repay the trouble and time spent.

ANTISEPTIC SURGERY.*

"THE antiseptic method is not intended to supplant or supersede what experience has hitherto proved to be useful in surgical practice." "It claims absolutely to exclude this (*blood poisoning*) hitherto not infrequent cause of death." Numerous hospital surgeons at the present date entertain the same idea and act up to their convictions; but, Listerism being still in its infancy, as it were, a great many of its practitioners, not having been pupils of its great originator, must in an emergency have felt the want of an authoritative reference in black and white. Our thanks are, therefore, due to Mr.

* An address delivered at St. Thomas's Hospital, with the subsequent debate, to which are added a short statement of the Theory of the Antiseptic Method, a description of the materials employed in carrying it out, and some applications of the method to operations and injuries in different regions of the body, and to wounds received in war. By William Mac Cormac, M.A., F.R.C.S.E. and L., M. Ch. Hon. Caus. Surgeon and Lecturer on Surgery. St. Thomas's Hospital, Consulting Surgeon to the French Hospital. London: Smith, Elder, and Co., 15, Waterloo Place. 1880.

Mac Cormac for having stepped into the breach with the present work. It had its origin in a paper written at the request of the Secretary of the South London Branch of the British Medical Association, to be followed by a discussion on the merits and otherwise of the antiseptic method of dealing with wounds. The opinions of the various eminent surgeons who took part in these meetings last December will still be fresh in the minds of all. Mr. Mac Cormac's address and the corrected speeches of those who came after him, are published in extenso, and occupy the first 99 pages of the book. We must confess that we regard the insertion of so much printed matter in its present form with no particular favour. The reports which appeared in the weekly medical journals at the time, were surely long enough and sufficiently exact for every purpose, and these papers in the 19th century travel nearly the surface of the globe.

The able address deals briefly with the germ theory and its application to every day surgery, with the various details of how the Listerian dressings should be properly used, and concludes with the production of statistical results of such treatment. These results are not only drawn from the practice of St. Thomas's Hospital, but also from that of eminent German and other continental surgeons, who are well known writers in this special branch of science. The testimony of continental *confrères* is worthy of marked consideration, for their hospital sanitary arrangements being of a very inferior type, it was only the introduction of Listerism that enabled them rightly to understand what satisfactory surgery meant, as formerly a capital operation, as a rule, was loss to the state of this particular member, from pyæmia or other form of blood poisoning. Some remarkable results of Dr. Reyhers, a Russian army surgeon, respecting gun

shot injuries of large joints are quoted. These show that in 18 cases in which the knee joint was injured by bullets, 15 recoveries with a movable joint resulted. In the Crimean war, before the days of antiseptic surgery, the experience of English surgeons, as attested by Professor Longmore, was that such cases invariably proved fatal, except when amputation was performed.

The second section of the book considers the antiseptic theory ; the germ origin of putrefaction is accepted ; "the theory suits and explains most of the facts ; and until a better be forthcoming we may accept it with a scientific reserve, but without hesitation." In the actual dressing of wounds, if a successful aseptic course be aimed at, it is necessary, at all events, to act as though teeming and revengeful microscopic organisms were trying to thwart every detail ; a slight digression and the whole is a failure. It may be that this excessive care being an essential feature in Listerism, has made the method a good number of opponents. Many an operator has commenced to test its truth and efficiency, but failing to get the expected results has discarded the treatment, at all events for a time, not recognising that the want of success was due to his own early and probably faulty manipulation. Reference is made to Watson Cheyne's experiments, which show that under antiseptic dressings, generally those that have been applied for some time, micro-cocci may exist ; these organisms differ from bacteria, and occasion neither smell nor discharge from the wound, and do not effect any local or constitutional disturbance—in fact, as far as our present knowledge extends, they may be said to be perfectly harmless.

The title of the following portion of the work is "On Antiseptic Material ;" this deals with the preparation of gauze of which various modes are cited, that of Lister

himself being the best; the gauze manufactured in this manner should contain about 9 per cent of carbolic acid when fresh; if kept for a long period it becomes untrustworthy, in a month or two, much of the acid being lost. With regard to other antiseptic agents the author agrees with most observers that Thymol is of little service, but mention is made of Acetate of Alumina, which is described as being a cheap, unirritating and non-poisonous antiseptic. The protective used in dressing, the mackintosh, the preparation of reliable cat gut, the various kinds of sutures and drainage tubes best suited for Listerism, together with other minor details, are discussed at length. The important and, at least in practice, somewhat troublesome subject of Steam Sprays is fully entered into.

The last portion of the volume is devoted to antiseptic practice, and includes the questions of osteotomy, compound fractures, ovariectomy, etc.; subjects in fact which are mentioned in the address at the first part of the book, although not so minutely. We can cordially recommend Mr. Mac Cormac's work as in every way a reliable reference on antiseptic surgery. We hope shortly to see a second edition minus the discussion which fills up the early pages of the present book, as now, in the interest of surgical history, a separate record of the same has been published.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.*

THIS volume presents, in an elegant form, the work done by the American Gynecological Society, which consists of 49 Fellows, and 13 Honorary Fellows. Among the latter are seen the names of Robert Barnes, Thomas Keith, Matthews Duncan, and Spencer Wells.

* Vol. 4. 1879.

Though the Society is, as described by its President, Gaillard Thomas, young in years, it is bent upon doing good work, which will compare most favourably with that of others of a larger and older growth.

The papers and discussions on intra-uterine medication are interesting, as shewing the greater caution used now compared with what perhaps obtained a few years ago. Intra-uterine injection is looked upon with the greatest disfavour, on account of its danger. Dr. Robert Battey urges the use of iodised phenol, the benefit to be derived from which in many cases of long standing endometritis, we can confirm from our own experience. Dr. Marion Sims, on the other hand, advises the use of the curette, without any other intra-uterine medication, regarding in such cases the symptoms as due to hypertrophy of the utricular glands, or fungous granulations in the cavity of the uterus: he states that by this means a cure is much more rapidly effected.

Perhaps the most important paper is the one by Dr. Paul F. Mundé on prolapse of the ovaries, which he considers as a rule has not been treated in the text books with the length and seriousness that it demands, as a distinct pathological condition. He gives a clear outline of its etiology, varieties, symptoms, significance and treatment. He advises mechanical treatment by posture and pessaries; but in cases incurable by these means, and at the same time productive of such pains as to make life miserable, no mention is made of oöphorectomy, which, we think, is now opening up as a most valuable means of relief and cure. It is an operation which may be said to be accompanied with but slight risk, and the condition of many women with painful ovaries is such as to justify them in undergoing, and their physician in performing, oöphorectomy. Spencer Wells relates the

details of a case of dysmenorrhœa, in which he removed both ovaries. Many such cases have now been done in this country with the most marked benefit.

Who shall decide when doctors, equally eminent, differ? Dr. Goodell reads a paper on elongation of the cervix uteri, and cites a number of cases illustrating the advantages of excision of the cervix. If we now turn to Emmet's recent work, chap. xxv., we find that "removal of the cervix is never called for except for some form of malignant disease, and that it is to a greater extent a malpraxis than any other procedure now resorted to in this branch of surgery." Certainly in our judgment, Emmet's operation for laceration of the cervix is a most valuable means of relief, but we are inclined to look with less disfavour than he does at the former procedure, as advocated by Dr. Goodell.

Dr. Joseph T. Johnson makes out a good case for "mismanaged labour, the cause of much of the gynecological practice of the present day." He says it has come to be a saying now-a-days, that it is as difficult to find a perfectly healthy woman as it was for Diogenes, aided by his lantern, to find a perfectly honest man.

In a discussion on extra-uterine pregnancy, one is almost inclined to think that it must have taken place a few years ago, as so little is said of treatment by abdominal section, which has now, in its successes, so far surpassed even the most sanguine hopes of its earlier promoters.

Taken altogether, the volume before us is one which will do honour to current obstetrical literature, and shows that good honest work is being done by the Fellows of the American Gynecological Society.

DISEASES OF THE THROAT, NOSE, &c.*

THIS volume commences with section 1. relating to the pharynx, a full description of the anatomy of the parts prefacing the examination of this region. Minute details are then given as to the preparation and examination of the patient's pharynx. It does not happen to every practitioner to be possessed of a long narrow index finger, and those who do not would do well not to attempt the exploration of the post-nasal region, although our author says.—“The mouth being widely open, the operator *can pass* his index finger upwards behind the soft palate, and the vault of the pharynx and its posterior wall in the upper region as well as the posterior nares and Eustachian tubes can be thoroughly explored.” Then follows a short discription of Pharyngeal Instruments, in some of which the author shews his mechanical ability.

His modification of Physick's tonsillotome, his double tonsillotome and uvulatome have been before the profession for some time and are now well known in practice.

The diseases of the pharynx commence with pharyngitis or catarrh of the pharynx : synonym, sore throat. Here we have a plan commenced which is used in all other diseases treated of in this book. First comes the name of

* “A Manual of Diseases of the Throat and Nose, including the Pharynx, Larynx, Trachea, (Esophagus, Nasal Cavities, and Neck.” By Morell Mackenzie, M.D., London, Senior Physician to the Hospital for Diseases of the Throat and Chest, Lecturer on Diseases of the Throat at the London Hospital, Medical College, &c., &c. Vol. I. Diseases of the Pharynx, Larynx and Trachea. London : J. & A. Churchill, New Burlington Street. 1880.

the disease, then synonyms, equivalents in four European languages, the definition of the disease, the etiology, symptoms, diagnosis, pathology, prognosis and treatment. All these divisions are marked by a lucidity and facility of expression which render the matter capable of being immediately understood ; there is no doubt existing in the author's mind as to what he would say, or how he should express it. Besides these divisions there is one which is of special interest and which does not occur until granular pharyngitis is treated of, and this it is which makes the manual approach completeness. We refer to the history of the literature of the disease. It is very useful to have a short account of how diseases became recognised and who the practitioners were who gradually separated them by more or less accurate definitions.

A short notice of uvulitis is followed by retro-pharyngeal abscess, in which, under the head of treatment, no mention is made of mechanical modes of supporting the head and vertebræ, and the necessity for them, when the abscess is due to caries of the cervical region. Surely some notice should be taken of such methods of treatment, and mechanical support insisted upon as a primary necessity in all such cases.

Dr. Solis Cohen refers to some cases in which after recovery from vertebral caries connected with retro-pharyngeal abscess, permanent deformity ensued from the altered position of the cervical portion of the spinal column. Again, we think that a note of warning is necessary with regard to the advice given on page 23. Here the author with the view of avoiding the danger of pus flowing into the pharynx from a recently opened abscess, advises that the head of the patient should be promptly leant forward the moment the incision is made ; this is good, but if the abscess is diagnosed as due to

caries of the cervical vertebræ, we would suggest that these are the cases in which the use of the trocar is indicated, and the bending promptly forward as surely contra-indicated.

In the article on relaxed throat and uvula (sub-article etiology) the author gives as the worst cause the habitual abuse of the stronger forms of alcohol, but omits all reference to the effects of smoking, either by itself or in conjunction with the drinking of raw spirits, yet in the article on granular pharyngitis, he contends that "the abuse of tobacco more often leads to simple chronic relaxation," than to granular pharyngitis.

On the drinking of spirits, our author says that his experience does not coincide with that of Horace Green, of New York, and Guéneau de Mussy, of Paris, who include smoking tobacco as a cause of granular pharyngitis. It may be as tobacco is grown both in America and France, that granular pharyngitis is caused by the excessive habit, and that this may be the full effect of true tobacco upon the pharynx, in which case these two diligent observers would be right, and as tobacco is not grown in England, and the populations of our large towns undoubtedly use large quantities of "doctored" tobacco and leaves of other plants as a substitute, that Morell Mackenzie would be nearly right when he states that "the abuse of tobacco more often leads to chronic relaxation," this probably being due to the fact that but very little pure leaf tobacco is consumed here, and that the adulterations and substitutions are the actual cause. We throw out this idea in the hope that before very long the exact place which tobacco holds in causing diseases of the throat, etc., will be fully recognised and detailed.

The article on diseases of the tonsils is most complete, and deserves the attention of the general practitioner.

On page 80 in ~~the~~ after treatment of œsophagotomy for dilatation of the pharynx, we should have expected to find the author advocating the use of nutritive enemata, instead of its being only "necessary to feed the patient through a tube until union had taken place."

After a short chapter on phthisis of the pharynx we have a section on traumatic pharyngitis, in which we notice that some of the causes are dismissed in too brief a manner to be of use to the general practitioner. For instance, under the head of phosphorus (a drug which has of late days been extensively used in general practice, and of which to our knowledge two cases of poisoning by phosphorised cod liver oil have occurred, in one of which it proved fatal) we have only the following bare statement: "phosphorous acts as a general irritant, and also causes redness of the mucous membranes of the throat. The breath has a strong odour of garlic."

The most prominent of all the phenomena in such a case is not either the redness of the throat or the garlic odour of the breath, but the belching forth of bluish white fumes, which are visibly luminous in the dark, and are the most reliable proof of the presence of phosphorus.

Besides this, the primrose color of the stools is exceedingly characteristic, and there is usually a history of an over dose. What of the treatment? There is absolutely no direction or suggestion to the practitioner as to how such a case should be treated, because the author says "as the action of the irritant poisons is very rapid, but little benefit can be expected from drugs which have the property of rendering them chemically inert when in a free state." Now in phosphorus poisoning there is one certain antidote, viz: carbonate of magnesia in ʒj doses every 15 minutes, until no phosphorescent breath is observed.

Phosphate of magnesia is formed ; the uncombined magnesia, by its mechanical action, protects the coats of the stomach from any further action of the phosphorus, and any free phosphoric acid is neutralised by it as it is formed. We cannot agree with the author when he says "it does not come within the scope of this article to indicate the various remedies that may be administered as antidotes, in order to neutralise the caustic effects of corrosive substances." We think that such antidotes are imperatively necessary in such a handbook, and also that a division should be made between drugs which corrode, and those only which irritate or inflame the parts, instead of their being mixed up as they are in this manual. This is by far the most imperfect article in the book. Interesting articles on wounds of and foreign bodies in the pharynx here follow, and in them we see the result of the author's vigilance and experience. Neuroses of sensation and motion of the pharynx here end the list of diseases of the pharynx proper, and now we begin upon a class of diseases in which the pharynx, larynx, trachea, and adjacent parts may be implicated.

In the second section we notice a considerable improvement over the well known essay on the laryngoscope, whereas in that admirable work the drawings of the instruments were scattered throughout the book, here they are all brought together, so that in a short chapter the practitioner may at once see all the best forms of instruments used in this specialty. We see that the author has spared no pains to make this article complete, for there are in this section over twenty new engravings of instruments relating to the surgery of the larynx. Here, as in the instruments relating to the pharynx, the author shews his power to use his mechanical knowledge to advantage, and there is scarcely any instrument of any

real good in this branch of surgery which is not either his own invention, or has at least, in his hands, undergone some important modification. It may be truly said of him that he is the Father of British Laryngeal Surgery. We had hoped that in what is practically a new edition of his essay on laryngoscopy, the author would have given us some of his experience in the art of using the laryngoscope on children. It is not so very difficult to reach a fair degree of dexterity in adult laryngoscopy, but with children it is almost impossible to see anything unless an anæsthetic is administered. We would suggest that in another edition this branch of the art should receive special consideration, as in many cases it is most desirable to thoroughly and deliberately inspect the parts.

The plan of this section is the same as that of the pharynx. We have first a group comprising the different forms of laryngitis, the acute, the acute œdematous, the traumatic, abscess of the larynx (not dependent upon perichondritis) the chronic, chronic glandular, trachoma of the cords, phlebectasis, chronic subglottic and chronic œdema of the larynx. Each member of this group is treated, as far as possible, in the same mode of division—into synonyms, definitions, history, etiology, &c.—as in diseases of the pharynx. These articles are exceedingly well written and place before the profession the most difficult diseases in the clearest manner, especially with regard to the diagnosis, treatment, and prognosis. He discusses the extra-laryngeal method of extirpating growths within the larynx, versus the endo-laryngeal by means of the laryngoscope. The tone of the discussion is eminently calm and judicial, and results in favor of all endo-laryngeal methods being exhausted before any operation is attempted which interferes with the integrity of the larynx or its membranes. Nothing could be more

complete than this article, which adds to the already very brilliant reputation of its author.

In the article on syphilis of the larynx we note with considerable satisfaction that pains have been taken to give what is really of great value to the general practitioner, viz:—a ready means of refreshing his memory on the question of differential diagnosis. Syphilis, phthisis, and cancer are here differentiated in their effects upon the larynx.

The very important subject of phthisis of the larynx is treated of in the course of a very well balanced argument, and we are glad to find that the pathology of this fatal disease is clearly and unhesitatingly laid down. Deposits of tubercle are, it is well known, to be found in the submucosa of the larynx. Dr. Heinze's elaborate investigations having proved their existence beyond doubt; but to thoroughly satisfy himself as to the truth of Heinze's results, our author has had his recent pathological specimens examined by his talented brother, Dr. Stephen Mackenzie, whose reports fully confirm Heinze's observations. A drawing of a section through the right ary-epiglottic fold shewing tubercles in situ in the submucosa is given on page 379.

Section 3 commences with the anatomy of the trachea and surgical anatomy of the laryngo-tracheal region, which is exceedingly useful, followed by tracheoscopy, and the tracheal image in which two good drawings of the anterior and posterior walls of the trachea and bronchi are given. We then have a very useful article on tracheal and tracheotomy instruments, with several engravings, one especially we call attention to, viz., the author's pocket canula for the emergency of sudden suffocation. This handy little instrument contains a knife in the handle of the pilot which is hollow, the

"whole instrument is so small and compact, that it can be easily carried in the waistcoat pocket."

The book ends with an appendix containing special formulæ for topical remedies, most of which are extracted from the Throat Hospital Pharmacopœia. He distinguishes those formulæ which he has found to be of special use by printing them in Egyptian type. There remains nothing more to say than that we have spent a very pleasant and profitable time in reading this manual, and we sincerely hope that it may have a very wide circulation and become, as we feel sure it is bound to do, the standard guide to the student and the general practitioner.

DEAFNESS, GIDDINESS, AND NOISES IN THE HEAD.*

"A CONSIDERABLE portion of the blood supply of the membrane of the drum is derived from an artery that leaves the internal carotid in the carotid canal and proceeds by a very short course directly to its destination. Being thus closely connected with a large arterial trunk, this small tympanal branch of the internal carotid possesses very favourable circumstances for a speedy augmentation of its blood supply. The nervi vasorum constituting the carotid plexus at this part of its course come largely from the otic ganglion. On the other hand the inferior dental nerve supplying the decayed tooth, or the gums, as the case may be, also communicates with this ganglion. We thus arrive at a direct channel of nerve communication between the source of irritation of the tooth, and the vascular supply of the drum head."

* "Deafness, Giddiness, and Noises in the Head." By Edward Woakes, M.D.
London: H. K. Lewis.

The author is here writing of the frequency of the occurrence of ear affections in childhood, either during dentition, or from a carious tooth ; and he further traces how, from the free inosculation of the vessels of the tympanic membrane, with those of the middle ear, the congestion once set up may pass into a condition of inflammation or suppuration of the latter, and that then, if the Eustachian tube is blocked up, there results pressure on the foramen rotundum and ovale, with tension of the endo-lymph and compression of the fibrillæ of the auditory nerve sufficient to produce convulsions.

In all the diseased conditions described in this excellent little book the same clear method is adopted, viz., that of tracing the source of the *nervi vasorum* supplying the vessels of the structure reflexly affected, then ascertaining their association with the vaso-motor nerves proceeding in an afferent direction from the tissue in which is seated the original lesion. This association is always found in a ganglion, which the author compares to a station on a "vaso-motor" line where the "points" are managed, and by means of which impulses are transferred from one line to another. In this way the irritation of teething is seen through the otic ganglion to cause otitis and its consequent evils—chronic post-nasal catarrh impairing the functions of the nerves of the post-nasal space to cause paralysis of the tensor palati and through the otic ganglion paralysis of the tensor tympani—in ear cough the chain of events to be as follows:—the irritation of the sensitive fibres of the auriculo-pneumogastric is reflected along the motor fibres of the superior laryngeal, exciting coughing by the contraction of the crico-thyroid—the ganglia implicated being the second of the vagus and the first cervical of the sympathetic ; and as a last example, vertigo (Trousseau's

stomach vertigo) is produced by the shock to the inhibitory nerves of the labyrinthine vessels, causing the latter to be distended, the direct channel of nerve communication being from the pneumogastric through the lower cervical sympathetic ganglion to the vaso-motor nerves on the vertebral artery, from which the arterial supply of the labyrinth is derived.

Ear-ache in laryngeal disease, ear sneezing, and the different noises in the head, are most satisfactorily explained, so it may be readily granted how much more probable is successful treatment when the source of the disease is so clearly shown. The directions for treatment are simple and to the point. Speaking of the removal of post nasal growths, under the influence of anæsthetics, the author states that however deeply the patient may be anæsthetised a quite immediate return to semi-consciousness is produced when the finger is introduced behind the velum palati; and he further suggests that this region should be irritated when any untoward occurrence takes place under chloroform. There is so much careful work in this book that it should be carefully read by every practitioner.

ORIGINAL COMMUNICATIONS.

ON RENAL INADEQUACY.

THE IMPORTANCE OF REGULATING DIET WITH REGARD
TO QUANTITY IN CERTAIN FORMS OF DISEASE.*

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I HAVE availed myself of the title of a lecture by Dr. Andrew Clark ("Renal Inadequacy." *Medical Times and Gazette*, vol. i, 1873), rather as affording me a convenient expression for the fundamental principle upon which my present observations are based, than as conveying an exact description of the cases to which I design to call your attention. Dr. Clark's patient suffered from the consequences of defective action of the kidneys, depending on what, for a better term, I may call functional inactivity; and the fundamental doctrine which the lecture was intended to enforce, I cannot do better than quote in Dr. Clark's own words; "The retention in the blood and tissues of what ought to be separated from them, and the absorption of what ought to be cast out, are fertile sources of disease. Without a wide and free excretion, our pabulum becomes our poison, and anæmia, nervousness, embolia, gout, rheumatism, and tissue degenerations, are occasionally the manifest expression of its baneful influence."

Now there are two methods by which the effect contemplated in this quotation may be brought about. The one

*Portion of a Clinical Lecture delivered at the General Hospital.

has been already indicated ; with a normal incoming the outgoing may be deficient. But the error may be placed at the opposite extremity of the process ; the incoming material may be in excess, and under such circumstances, although the organs appointed to carry away the relics of the nutritive process may be in full operation, may even be exerting themselves to an unusual degree, in their efforts to relieve the system, as was the case in some of my patients, they may yet find themselves unequal to the work of freeing the system from the products of tissue decomposition, which will consequently accumulate within the body and act as poisons towards the tissues in which they collect.

This is what takes place when the supply of food furnished to the digestive organs is in excess of the requirements of the body, and as this method of producing the effect is most closely connected with our tastes and inclinations, the cases in which the purifying processes fail, through no fault of their own, are largely in excess of those in which the charge of failure lies at the door of the eliminating organs themselves. It is upon this branch of the subject that I now wish to say a few words : first, because the cases to which it refers are numerous ; and secondly, because I wish to call your attention to the supreme importance of attention to diet in their treatment, and to diet, especially as regards quantity. This may seem to you a very simple matter, needing little logic for its enforcement ; and, perhaps, such may be the case ; and yet I do not think the subject has always met with the attention it deserves. Dietetic rules, as regards the nature of the food, the time of eating, preference for particular forms of aliment in certain states of health, &c., are by no means uncommon, and are of

unquestioned importance ; but I am apt to think that the element of quantity is too apt to drop out of our consideration. Yet, if you bear in mind how many circumstances there are which influence the amount of food required to maintain a sound condition of bodily health, how greatly different individuals must vary in their requirements, how much even the same individual at different periods of his life ; and, if you think further, how greatly the amount of food of which the system can conveniently dispose, will be conditioned by the activity with which the bodily and mental functions are set in operation by states of health and by habits of life, you will see how necessary it may be for us to inform ourselves respecting our patient's habits in eating, and to put him on his guard against the danger of transgressing the limits of health—often it may be in pure ignorance.

“ Nothing pesters the body and minde sooner than to be still fed, to eat and ingurgitate beyond all measure, as many do. By over much eating and continual feasts they stifle nature, and choke up themselves ; which, had they lived coursly, or like galley slaves been tied to an oar, might have happily prolonged many fair years.” (Burton's *Anatomy of Melancholy*.)

Now there are more than one class of persons who are liable to become the subjects of my present remarks. First there are, of course, those persons who are addicted to the pleasures of the table. “ Man alone, saith Cardan, eats and drinks without appetite, and useth all his pleasure without necessity, *animæ vitio* ; and thence come many inconveniences unto him ; for there is no meat whatsoever, though otherwise wholesome and good, but, if unseasonably taken, or immoderately used, more than the stomach can well beare, it will engender cruditie, and do much harme.” There is, however, a distinction

to be made between certain members of this class. My observations apply less directly to the "gourmets," to those whose enjoyment is derived from refinement in the culinary art, than they do to the more gross feeders, whose pleasure lies rather in the act of eating, than in gratifying their palate. But there is another group of individuals who merit attention even more than those whom I have just indicated, because they are liable to sin in ignorance. There are many persons, both men and women, blessed with strong health, who carry into middle and advancing life the vigorous appetite and active digestion of their early years; such people deem themselves to be only obeying the suggestions of nature in complying with the demands of an appetite which had guided them faithfully in their earlier years; they are ignorant that nutritive changes go on less rapidly as the body grows older, and that superfluous matter is less easily disposed of; they forget too to note the decline in tissue waste, when habits of mental and bodily activity are changed for the greater quiet of advancing years. Such persons become subject to various signs of an overburdened state of the eliminating organs; they become stout, sleep heavily after dinner, are less disposed for exertion than was their wont, and they suffer from what they term "bilious attacks," which should serve to them as a warning, from the temporary improvement they experience after the abstinence and medical treatment required to set them right. "You have naturally an athletic constitution" writes Sir Walter Scott to his friend James Ballantyne, "and a hearty stomach, and these agree very ill with a sedentary life, and the habits of indolence which it brings on. Your stomach thus gets weak, and from these complaints of all others arise most commonly flatulence, hypochondria, and all the train of

unpleasant feelings connected with indigestion. We all know the horrible sensation of the nightmare arises from the same cause which gives those waking nightmares, commonly called blue devils."

A very forcible illustration of my doctrine occurs in John Bell's *Surgery* (4to, vol. 2, 661) an illustration, which is the more to my purpose from its coinciding in the encouragement afforded by some cases of my own, by the happy result which attended a change in the patient's habits. A man of vigorous constitution, who had lived a life of great mental and bodily activity, and had become very plethoric, contracted a fistula, and thenceforward was unable to mount a horse or even to get into a carriage. He concealed his malady; led a secluded life; sank into slothful and sedentary habits; ate and drank and slumbered night and day, until his senses were entirely gone. Mr. Bell found him so lethargic, that he was compelled to trust to the report of his servants and friends. He was treated by blisters and frequent drastic purges, and in a few weeks was cured of his lethargy; the fistula was healed; and, adds the author, "having left him with the Prince's instruction to his companion 'to live cleanly,' he has recovered the natural vigour of his mind and body."

The appetite which thus tempts to unhealthy indulgence may even exist as a form of stomach neurosis, in certain individuals of morbid antecedents. I sometimes see a lady whose two brothers both died from chronic alcoholism; she is herself perfectly free from any suspicion of alcoholic indulgence, but she has the same kind of morbid desire for food, which tempted her brothers to drink; she is becoming unhealthily stout, and on more than one occasion has presented some unpleasant evidence of cardiac disorder.

The class which I mentioned first is undoubtedly a large one: yet I believe that the individuals who compose the groups which I have just described are still more numerous. There appear to be many who take it for granted that the desire for food is really the one appetite which does not need to be regulated, and may be safely followed as a guide; they receive our cautions with honest surprise, they think they make a satisfactory reply when they say that "they really feel to want the food they take," and it is not always easy to convince them that they may be doing wrong in eating the meal which nature seems to prescribe; our interview is apt to be closed with the half incredulous remark of our patient, "it seems very hard that I may not take the food which is before me, when I really want it." Yet in regard to the desires of the stomach, as to other desires, we may justly apply the remark of the quaint writer, whom I have twice quoted, "Temperance is a bridle of gold, and he that can use it aright is liker a god than a man: for as it will transform a beast to a man again, so will it make a man a god." "To preserve thine honour, health, and to avoid therefore all those inflations, torments, obstructions, crudities and diseases that come by a full diet, the best way is to feed sparingly of one or two dishes at most; to have *ventrem bene moderatum*; to choose one of many, and to feed on that alone:" and the whole may be summed up with the author's terse injunction, "they must be sure to rise with an appetite."

I do not attempt to bridge over the chasm which exists between cause and effect in the cases of which I am speaking; unfortunately physiology, as yet, enjoys but a very imperfect insight into the processes which intervene between the ingestion of food and its final expulsion in the form of excrement. That the food enters the blood

in a certain condition, is conveyed to the tissues and there converted into use, and that having performed its function in the economy, by releasing energy, is discharged in an altered condition, are well established facts ; but within the limits of these facts, there is much which is concealed from observation. It is considered likely that not the whole of the ingested material is conveyed to the organs, but that some portion is subjected to excremental changes, probably in the intestinal canal, without having been previously converted into tissue (vide Foster's Text Book of Physiology, 1878, p. 351) ; there can, however, be no doubt that the principal portion of the aliment enters into the cycle of tissue changes by which the operation of the various organs is carried on. Moreover it is now pretty certain that the ultimate molecular changes are conducted in the substance of the tissues themselves, and not in the blood as was formerly supposed ; and the presence in the tissues of various chemical substances, such as carbonic acid and lactic acid besides glycogen in muscle, urea and uric acid in the liver, uric acid in the spleen, &c., affords evidence of the results of such processes, and points to the method by which the tissues themselves may be poisoned, and their function be impeded, when the proper relation between supply and demand is disturbed. One sentence from Dr. Michael Foster (*ut supra*, p. 384) contains the truth of this doctrine. ". . . we are driven nearer and nearer to the conclusion that all food which has become absorbed into the blood must become tissue before it becomes waste product, and only becomes waste product through a metabolism of the tissue. When we say 'become tissue' we must leave it at present wholly undecided how far the constant metabolism, which this view demands, affects the so-called structural elements of

the more highly organised tissues. It is quite open, however, for us to imagine that the ground substance of muscle, for instance, might undergo large and rapid metabolism, while the change of sarcous elements or muscle rods might be much slighter and slower."

Without, however, it being necessary for us to follow nature into the recesses of her laboratory, there are two very obvious results of the class of dietetic errors forming the subject of our present thought, which will sufficiently indicate in the gross, the mischief possible to be effected in detail.

In the first place large excess of food tends to load the body with the result of tissue metamorphosis, and this must be especially the case when the excess is in animal food. Proteid food increases the activity of tissue change, "leading to a rapid consumption, not only of itself, but of non-nitrogenous food as well;" hence a large meal of proteid material must tax the system to the utmost in getting rid of, or storing away, the nitrogenous crystalline bodies arising through the *luxus* consumption, either in the alimentary canal, or in the liver (*op. cit.*, p. 384).

In the second place, it is now fully established that proteids break up in the body into nitrogenous and into fatty matters; and that animal food becomes, in this manner, an important means of increasing the adipose material of the body. This is strikingly evidenced in the formation of milk; it is supported by chemical formulæ; and is accordant with the observed phenomena of nutrition. Hence, a further evil of unrestrained indulgence, that the fat in the body is mischievously augmented, and a class of evils, some of them of a directly mechanical nature, is created.

I will now quote a few cases to illustrate the subject on which I have been treating.

Among the organs of the body probably the heart is one of those most apt to suffer when the tissues have become loaded with the waste products of nutrition. Not only does the fibre of the heart become injured, as does the fibre of other muscles, but the difficulties of circulating the blood are liable to be increased, through variations in arterial tension consequent on impure conditions of the blood. The high arterial tension, and the hard pulse, to which gouty subjects are liable, and the benefit derived from purging, under such circumstances, enforce this doctrine. Perhaps in no class of cases is the benefit to be derived from dietetic treatment more pleasingly manifested, than in those in which the heart is the principal sufferer.

A gentleman, aged 54, consulted me with symptoms of very severe angina; the pain in the chest and dyspnoea were so severe, and so readily excited, that I felt it necessary to give a serious warning to the patient's friends, and to forbid his being allowed to go far alone. There was nothing special in the physical examination of the affected organ. The patient was a prosperous man, of vigorous health, of regular habits, and holding a high position in the society among which he moved; but he enjoyed life; was a hearty eater, though no longer compelled to put forth the exertion formerly required of him; and his Saturday's dinner, at the end of the week's work, was generally taken in a society of friends, and was very fully enjoyed. He was a large man, of florid complexion. I was fortunate in having very intelligent assistance from his wife in conducting the dietetic regimen. I watched the work performed by the kidneys during the next five months, with much interest, and it was doubtless through their activity that much of the cure was effected. His secretion

of urine during that period averaged 50 oz. in twenty-four hours, ~~of~~ s.g. 1023; the urine contained an enormous deposit of uric acid gravel. I lost sight of my patient at the end of nine months, but fifteen months later he hailed me in the street and told me that he had reduced himself from over nineteen stones to a little above twelve, and had walked five miles besides having digged in his garden. Now, eight years from the period of his illness, he continues in good health, though compelled to keep strict watch over his appetite, and owing to an occasional lapse.

A gentleman, aged 46, brought to me by a professional friend, with similar symptoms, though conducting a large business was unable to burn off the excess of waste with which a strong appetite had loaded his system. At the time of his visit to me he weighed sixteen stones height five feet, he had weighed eighteen before having been placed under regimen by my friend. He passed a considerable quantity of urates, and by continuing the treatment already commenced his weight fell to fourteen stones, with perfect recovery of health and freedom of locomotion. Twelve months later I heard from his wife that he had some threatening of a relapse; "you see, Dr. Russell," she significantly added, "the great difficulty is his appetite."

The wife of a tradesman in a neighbouring town, who was her husband's right hand in conducting a considerable business, though almost a teetotaller, could not avoid gaining a very large bulk, and suffered in consequence from severe cardiac symptoms. Her husband had been perfectly aware of the error she was committing in the amount of food she took, under the seduction of a large appetite, but could not induce her to believe that her natural appetite was not a trustworthy guide. She was

passing thirty ounces of urine, of s.g. 1024, containing urates and gravel, but free from albumen.

In some instances disordered action of the heart occupies a minor position among the symptoms, ranging itself among digestive disorders. One of my patients, suffering in this manner, spoke of his "strong appetite;" he averaged three quarters of a pound of meat daily, in addition to ham and two eggs at breakfast, and five or six glasses of ale.

A more striking instance was afforded by the case of a respectable tradesman, aged 51, of very regular habits, but obviously taking more food than he required, who had had an attack of gout. He suffered from troublesome vertigo, accompanied occasionally with fits of alarming cardiac collapse. He had besides some remarkable paroxysms of sneezing, which were uniformly followed by entire loss of sleep with considerable nervous excitement. His urine was free from albumen; the sounds of his heart were pure and natural. I placed him on a careful diet. At his next visit he told me that he had lost eighteen pounds, and was in all respects improved; he was able to walk better than he had done for a year. He gradually reduced his dietary, and improved as he became thinner, and finally was nearly free from his troublesome attacks.

I will not enter into the complex subject of nervous derangement, though it is largely related to the cause of disease on which I am insisting. No small part of what is called gouty hypochondriasis would fall to be considered under this head. It is not improbable that occasionally even thrombosis or embolism may be among the consequences of the present class of nutritive derangements.

Mr. Robertson (*Physiology and Diseases of Women*, p. 46), speaking of the Esquimaux says, "Their gross and

indiscriminate gluttony is scarcely to be credited, and their food being exclusively animal, they become plethoric and bleed at the nose on the least exertion. This indeed is an accident so common among them, that it may be said to be characteristic of Esquimaux." I had repeatedly attended a gentleman, who at the age of fifty or fifty-two, became subject to paroxysms of irregular gout. Some years after he consulted me for repeated attacks of very troublesome epistaxis. I then made enquiry into his habits, and found that without being open to the accusation of being self-indulgent, he was yet too hearty a feeder for his age, and somewhat inactive habits of life. Without prescribing medicine, I explained to him the excess to which he was liable. He listened intelligently though with evident surprise; he obeyed my directions, lost weight; and has had no bleeding for the last two years, nor any return of gout.

Probably obstruction of vessel was the cause of the symptoms in the following case. It occurred in the person of a gentleman, aged sixty, of perfectly regular habits, and of robust health. I learned from his family that they had feared his appetite was too good for his age, though his habits of life were very active. He was a large man, of full habit. One day whilst driving home in his pony carriage he was suddenly seized with severe vertigo; his carriage seemed lifted up on one side, and about to be toppled into the ditch. He contrived to reach home, but afterwards on going into his bed-room he had a second attack, in which he fell heavily. He was left with slight weakness on the left side; he had a little vomiting, but he continued to be troubled with incessant hiccough, which did not leave him for ten days. His urine was healthy, there was nothing wrong with his heart. He received my instructions as to the amount of his daily food with considerable surprise,

but with perfect docility. He is now away in the north of Ireland, and I hear has much improved.*

The cases I have quoted suffice to justify the teaching which it has been the purpose of this lecture to convey. I think too, that they confirm my estimate of the importance of the subject, by the serious character of many of the disorders which I have illustrated, as well as by the success with which the treatment may be employed, when attention has been awakened to the nature of the case at a sufficiently early period. For you must remember that there are materials in these cases for producing direct organic changes. The morbid condition attending fatty growth on the heart, long ago described by Dr. Quain in his classical paper on the subject, affords a coarse illustration of the possible mischief. But besides such gross changes there are others of a more subtle nature but equally dangerous to health, and to the enjoyment of life. Such lesions affect the molecular composition of tissues. Could our chemistry penetrate into the nutritive processes more profoundly, probably we should find the alteration to be expressed by change in chemical composition rather than in histological construction; the tendency would prove to be to spoil the composition, and to set up some of those changes which pass under the convenient name of degeneration; and the final issue would be manifested by the gradual

* Whilst writing the foregoing sketches I was called in consultation with a professional friend on a case of apoplexy in a plethoric woman, aged 50. By way of giving us an idea of his wife's habits, the husband mentioned a day's dietary a week previously. Three good meals were supplemented by a supper of three platesful of lamb and salad. To his repeated remonstrances she believed her reply to be unanswerable, "where's the harm, so long as I want it?" Her husband himself seemed to feel some sympathy with her, for he avowed his own proclivity in the same direction, so that he took refuge in flight, adopting the maxim—

He who fights and runs away,

Will live to fight another day.

But he had not escaped gout.

decline of the portly figure into a loose skinned attenuated frame, and the cheerful temper and active intellect into mere valetudinarianism

I shall conclude with giving the particulars of one other case, which I add because of its peculiar character, and of its illustrating the varied aspects which this class of disorders may assume. A gentleman, aged about 35, who admitted that he had been somewhat intemperate in former years, but not lately, but who exceeded considerably the healthy standard, in the amount of solids he consumed (taking *e. g.* a pound and a half of meat daily) sent for me on account of what appeared a general derangement of health, of which headache had been a prominent symptom. He was speedily relieved of his headache, and I believed him to be nearly recovered, when at the end of the third week, on calling one day, I was surprised by finding my patient considerably worse. He complained of feeling extremely feeble, told me that he had been somewhat confused during the preceding night, and showed me his tongue, which was thickly coated with a dirty brown fur. On getting him to bed I found the thermometer registered a temperature of 103° in his axilla. Little doubting that he was commencing a relapse of ambulatory typhoid, I felt somewhat humiliated by my supposed oversight, but to my renewed surprise nothing appeared to justify my self condemnation. There was no eruption; the spleen did not increase in size; the bowels only answered to castor oil; the nocturnal confusion did not return, and the patient slept well; the appetite for milk, and for light pudding, continued good. Only the evening temperature continued steadily at, or about 102° ; the tongue never varied in its thick dirty fur; and, what I have not yet mentioned, the urine, which was abundant, was uniformly heavily loaded with red urates, and was moderately

albuminous. Thus the patient continued for nearly four weeks, hardly changing, and entirely unaffected by any medicine I employed. I should say that physical examination of heart and lungs gave a perfectly satisfactory result. At the end of the fourth week, the temperature fell to normal in the course of two or three days, the urine became clear and lost the albumen; the tongue freed itself of its fur, and the patient was well but for necessary weakness. But he had disposed of so large an amount of his movable solids during his illness, that he required to be fitted entirely with new clothes.

In watching the symptoms, I came to the conclusion, amply justified by the issue, that the entire illness consisted in a process of purification, set up by the overburdened tissues of the body, and attended, like any nutritive change suddenly developed, with pyrexia. Call it acute systemic gout, if you will. I may add that my friend, Dr. Wade, whom I requested to see the patient with me, coincided in the opinion I formed as to the nature of the ailment.

One word in conclusion. The subject of my lecture has related to diet, and I have therefore limited my attention to this one branch of the treatment applicable to the cases of which I have spoken. But I must not end without saying that equal care must be taken to enforce the importance of mental and bodily exercise. The latter truly is the correlative to dietetic rules; it governs the outgoing as regimen does the supply, and is of equal importance. Indeed it will happen in not a few instances, that the necessity for restricting diet has arisen mainly from the patient having lessened the activity of his mind or body, and therefore resigned much of the need which justified the demand made by his appetite.

ON UROBILIN AND ITS ORIGIN.

BY C. A. MAC MUNN, B.A., M.D.

IN the Dublin Journal of Medical Science for June, 1877, I observed, in describing the absorption spectrum of human urine, "Every specimen of urine, when examined in a sufficiently deep layer, gave a band low down in the spectrum, at the F line. In high-coloured urine, it is much better marked." I also noted the fact that caustic soda sometimes caused this band to be replaced by another one, nearer the red end of the spectrum, and that caustic potash sometimes caused the band to disappear, but nitric acid again restored and intensified it. Since the publication of the above paper I have lost no opportunity of examining urine spectroscopically, and I can always see a band at the F line, but while this is replaced by another one nearer the red end of the spectrum in the case of pathological urine—especially in febrile cases—it sometimes only *disappears* with this reagent in the case of normal urine. In both febrile and normal urine the band generally disappears with ammonia. In my book on the spectroscope I lay down a proposition to the effect that the absorption band at F is due to urobilin, but I do not use the word *febrile*; and those who have criticised my statements have failed to notice that I had purposely avoided using that expression. Subsequent investigation has fully confirmed the truth of my statements, and now that I have succeeded in isolating the pigments which give a band at F, I hope shortly to be able to shew that normal urine contains a pigment derived from bile-pigment, and to shew how this differs from febrile urobilin. In this paper I shall merely describe the method of

isolating the latter pigment from urine, and give its principal spectroscopic and chemical characters; in addition, some observations bearing upon its source may not be considered out of place.

In Hoppe-Seyler's *Handbuch der Physiologisch-und-Pathologisch Chemischen Analyse* (fourth edition) will be found an account of febrile urobilin; and as this is the most satisfactory description of it, an abstract is here given. Jaffe first obtained a substance from urine by precipitating with acetate of lead and treatment of the precipitate with alcohol and sulphuric acid. He defined its spectroscopic appearances, and he found that the same spectroscopic appearances could be obtained by the action of hydrochloric acid on bile. Maly discovered that by the action of sodium amalgam on bilirubin or biliverdin suspended in water, a pigment could be obtained by treatment with hydrochloric acid, which gave the same spectroscopical appearances as Jaffe's urobilin. Maly called this pigment hydrobilirubin; and Hoppe-Seyler obtained a similar pigment by the action of tin and hydrochloric acid on haematin. Maly found that he could get the pigment more or less pure from urine by precipitation with basic acetate of lead, washing with water, drying, and pulverizing. The precipitate was then extracted with sulphuric acid and absolute alcohol; the red solution was treated (to saturation) with ammonia, and again filtered. To this filtrate an equal quantity of water was added, and it was then precipitated with zinc chloride, so long as a brown-red precipitate fell down. By precipitating highly coloured febrile urine with zinc chloride and ammonia, washing the precipitate with cold and hot water, extracting with sulphuric acid and alcohol, shaking with chloroform and water, separating chloroformic solution, and washing repeatedly with water,

first by distilling off the chloroform and drying the residue, Hoppe-Seyler obtained the pigment. The chloroform solution is fluorescent with a green colour, while uronine obtained from bilirubin is not fluorescent until its ammoniacal solution is treated with a couple of drops of solution of chloride of zinc. This pigment gave a black band at F, which was replaced by another band nearer the red end of the spectrum when the solution was treated with caustic soda or caustic potash; this was not so well marked with ammonia. By these appearances, and by the green fluorescence, the pigment may be diagnosed in very dilute solutions. (Hoppe-Seyler.)

The pigment is very soluble in watery alkaline solutions, its combinations with potassium, calcium, barium, and ammonia being all readily soluble. In neutral solutions it is precipitated by zinc salts. It is also precipitated by acetate of lead, sulphate of copper, nitrate of silver, alum, perchloride of mercury and platonic chloride. The analysis of the silver and zinc salt by May shows that there is a basic and a less basic compound, the less basic containing three equivalents of metal.

May believes that urobilin is formed in the intestine by *reduction* of bilirubin, and that it is taken into the blood and excreted by the kidneys; he also believed that he had found it in the serum of the liver, but Hoppe-Seyler thinks that he mistook lutein for it, as lutein also gives a band at F.

Hoppe-Seyler holds that normal urine does not contain urobilin or urochrome, but a substance which passes into it by spontaneous oxidation, an observation first made by Jaffe, and which has recently (1878) been confirmed by Dragendorff. It would be premature to give here an account of my own observations on this last point, but I may

state that the experiments which I have been making, and in which I am at present engaged, have advanced our knowledge of the subject a step further, and have confirmed the observations of Jaffe and Disque.

After many unsuccessful attempts I succeeded in isolating febrile urobilin from the urine of a case of phthisis, and the results were laid before the Royal Society in a paper, an abstract of which is published in the Proceedings* (No. 202, 1880), and a portion of which abstract subsequently appeared in the Dublin Journal of Medical Science (June, 1880). This method is simple, and by its adoption urobilin can be got in a pure state. It is as follows:—The urine is precipitated with neutral and basic acetate of lead, and filtered; the precipitate in the filter washed with water; it is then extracted with alcohol acidulated with sulphuric or hydrochloric acid, and filtered. The last filtrate, in small quantities at a time, is put into a separating funnel and shaken with chloroform and water repeatedly; after having stood some time the chloroform layer is separated off and filtered, and the chloroform is then distilled off, leaving the pigment.

The urobilin thus obtained is a brown-red amorphous pigment, soluble in alcohol, chloroform, certain acids and acidulated water, partially soluble in ether, water, and benzol; but almost or quite insoluble in bisulphide of carbon. It contains carbon, hydrogen, oxygen, and nitrogen, in what proportions I have not yet determined, but according to Maly it contains $C_{22}H_{14}N_4O$. If it be produced from bile-pigment by oxidation I believe its formula will be found to be nearer $C_{14}H_{10}N_4O$, but the calculation of a formula for either biliary or urinary pigments appears to me a matter of but little importance.

* And which will shortly appear in extenso.

for after this knowledge has been gained we are as much in the dark as before as to what *type* the body should be referred. The knowledge of the *origin* of urobilin is of far more importance, especially from a medical point of view, and notwithstanding the assertion of some physiological chemists to the contrary, we now can prove that urobilin can be produced from bile-pigment. The peculiarity of the spectrum of febrile urobilin is this:—that its band at F can be made to shift nearer the red with caustic soda,* the band produced by the latter being also less shaded than the original one, and also that the band at F can be caused to disappear by the addition of ammonia. In aqueous solution this replacement of the band is not so well marked. But in such solution the band is made darker by acids and fainter by alkalis.

In urine the band generally reads from wave-length 501 to 478, while when treated with caustic soda it may read from 513 to 488, or thereabouts. The amount of displacement partly depends upon the refractive power of the fluid in which the pigment is dissolved. And in this, as in the case of other pigments, great caution is necessary in drawing conclusions from comparative observations, for in comparing results we should use solvents of equal refractive powers for the solution of the respective pigments.

The discovery of urobilin in the bile of the mouse and of the appearance of a feeble band at F in the bile of various animals, suggested the probability of the biliary origin of urobilin. These preliminary observations have led up to the conclusion that urobilin can be produced from bilirubin by oxidation, and thus an explanation has been afforded of the causation of certain kinds of jaundice which have hitherto been considered inexplicable.

* See Spectroscope in Medicine, Chart. II., 16 and 19.

When a chloroformic solution of bilirubin is treated with nitric acid in a watch-glass, placed on the stage of the microspectroscope and the spectrum observed, we note that the change of colour characteristic of Gmelin's test is accompanied by a series of alterations in the spectrum. At one stage of the reaction, we notice a band on each side of D and one at F, but at the completion of the oxidation only the band at F: it is, therefore, evident that the pigment whose spectrum is marked by three bands, is less completely oxidised than that whose spectrum is marked by one band—that at F. Now the urobilin of phthisis when dissolved in chloroform gave the band on each side of D, which were not only placed in the same part of the spectrum as those seen in Gmelin's reaction, but which in other solutions were replaced by a band covering D when ammonia was added, identical in position with a band produced by the addition of ammonia to a solution of partially oxidised bile-pigments. Thus, then the urobilin of phthisis represents a stage of oxidation of bile-pigment in which the process has not been completed. A chloroformic solution of bilirubin, which had become partially changed into biliverdin by exposure to the air, was evaporated over the water-bath; the residue when dissolved in water was treated with nitric acid, and the solution observed with the spectroscope until the bands on each side of D had disappeared, and that at F only was left. It was then put into a separating funnel, and shaken with chloroform; the chloroform driven off, the residue dissolved in chloroform and filtered, and the residue after the chloroform was again evaporated—appeared similar to normal urobilin, for the same solvents dissolved it, and reagents produced the same changes in the respective spectra of its solutions.

But by the action of hydrochloric acid the same transformation takes place in the spectrum of solutions of bile-pigment, so that it became necessary to see if a like transformation could be brought about by other methods wherein oxygen was the agent concerned.

Human bile from the gall-bladder of a man who died from cerebral hæmorrhage was treated with absolute alcohol to precipitate the mucus and then filtered; it was then shaken with chloroform. The chloroformic solution of bilirubin was separated off in a separating funnel, and put into a bottle: the whole repeatedly shaken, the cork being taken out occasionally to allow of the renewal of the air in the bottle, which was only about one-third filled with the chloroformic solution. The fluid soon became of a greenish tinge, and after the lapse of forty-eight hours it gave three bands, one on each side of D and one at F, and when ammonia was added to this solution a band appeared covering D; all these bands were identical in position and shading with those observed in the chloroformic solution of phthysical urobilin. At the end of three weeks the colour of this fluid was brown-yellow with transmitted light, and it then gave only the band at F.

By passing a stream of oxygen from a gasholder for a considerable time into a similar solution the same appearance was observed.

Potassium permanganate also finally produces a band at F, when made to act under suitable conditions on solutions of bilirubin or biliverdin, and peroxide of hydrogen is capable of advancing the oxidation process a stage, but its action is not by any means as energetic as other agencies.

Since the publication of some of these observations in the Dublin Journal many other experiments of a like kind

have been made, and all tend to support the oxidation theory of the formation of urobilin.

Since Maly published an account of his experiment, whereby he alleged that he had converted bilirubin into urobilin by means of sodium amalgam, and subsequent treatment with hydrochloric acid, physiologists have, with but few exceptions, accepted the conclusion which Maly's experiment led him to form, viz.: that the transformation is due to reduction. I have repeated this experiment several times, and I have found that the transformation is partly probably due to the action not so much of nascent hydrogen, as to that of caustic soda, and subsequently hydrochloric acid; for when a piece of solid caustic soda was allowed to dissolve slowly in a solution of biliverdin, and when the solution was subsequently treated with hydrochloric acid, the result was the same as when the sodium amalgam was used. The caustic alkalies exert an oxidising action on many organic bodies, and more especially would this be likely to take place with an unstable body like biliverdin. The metal sodium combines (when set free from its union with the mercury in the sodium amalgam) with the elements of the containing water forming caustic soda, and it is this which brings about the first part of the change which the hydrochloric acid completes.

It would appear from these experiments, and from the spectrum of phthisical urobilin, that febrile urobilin can be formed by oxidation from bilirubin and biliverdin. If this can take place outside of the body by mere contact with air, how much more likely is it to take place in the body where the oxygen is in a very active condition?—so much so, that it has been supposed to be present therein in the condition of ozone. If this be so, we may conclude that anything which would hinder the normal oxidation of

bilirubin into urobilin would lead to the excretion of incompletely oxidised bile-pigments in the urine, or if the bilirubin were present in such quantities in the blood that enough oxygen were not forthcoming to bring about the change into urobilin, jaundice might be produced. Or if the normal amount of bilirubin were present in the blood, but a deficiency of oxygen, the same result might follow. Thus jaundice could be produced by the destruction of the oxygen-carriers, the red blood corpuscles; or by the presence in the blood of poisons which would prevent the exchange of oxygen between the blood and the tissues; or by breathing vitiated air; or certain poisonous gases; or by diseases of the lungs; in fact, by anything which prevents oxidation immediately or remotely.

The urine of jaundice accompanied by fever often fails to give a reaction with nitric acid. The reason of this would appear to be, that the bilirubin in the blood becomes oxidised in consequence of the excessive oxidation which accompanies the febrile state, and appears in the urine as febrile urobilin; and as it has been already oxidised it cannot again undergo that change.

A support is lent to my theory by an observation made more than once, viz., that a febrile condition superadded to a case of jaundice often causes the bile-pigments to disappear from the urine (and to be replaced by urobilin). The jaundice due to pneumonia, some kinds of icterus neonatorum, jaundice from breathing vitiated air, that due to snake-bites (Dr. Lander Brunton, has observed that the blood corpuscles are altered in these cases and probably rendered unfit to carry oxygen): the jaundice of phosphorus poisoning (?); that produced by chloroform and chloral, and that which complicates certain specific fevers are explained by the oxidation theory. This theory also explains the causation of hæmatogenous jaundice

better than any other, and it explains the reason why bile-pigment has appeared in the urine of dogs into whose circulation bile-salts have been injected ; for the latter have a rapidly destructive action on the red blood corpuscles, and thus prevent the oxidation of bilirubin into urobilin. The formation of stercobilin or the colouring matter of fæces has generally been put down to the action of nascent hydrogen in the intestine, I think it may be also due to the action of the hydrochloric acid of the gastric juice on the bile-pigments in the intestine. It is not difficult to imagine that what hydrochloric acid can do out of the body can be done inside, if the acid be present in sufficient quantity.

A knowledge of the facts which I have described may be turned to good use in the diagnosis of some pathological fluids. Thus, a physician brought me a bottle containing some bloody fluid which he had removed by the aspirator, and which he suspected had come from a cyst connected with the liver ; on shaking up with chloroform, and separating off the chloroformic layer, which was slightly yellow, it gave the absorption characteristic of bilirubin, viz.:—obscuration of the violet end of the spectrum ; and when a little nitric acid was added, the black band at F, already described, appeared at once. This afforded absolute proof of the presence of bile-pigment, and at the same time convinced my friend of the value of the spectroscope as a help to clinical medicine.

THE MEDICAL PRACTITIONER IN HIS RELATION TO SOCIETY.*

BY JOHN MEREDITH, M.D., EDIN.

THE office of President of a Medical Society is one which anyone may be proud of, and for many reasons; among others in that it affords an exceptional opportunity of appearing before professional brethren and associating with them. At the same time the office is not without its duties and responsibilities.

In looking about for a subject to discuss before you during the brief period which good custom allows me on assuming the chair, I have been perplexed, more by the multiplicity of things than by the contrary.

In reading the Memorandums of Association of the great Society to which we belong, I find it is there stated—that among other things—the object of the Association is to “Maintain the honor and interest of the Medical profession” by lawful public means.

It occurs to me then, that we might occupy the next few minutes in regarding ourselves, in looking inwards as well as around us, and see where we really stand among men.

Medicine with us is based upon science, imperfectly developed in many respects we readily admit—the reason no doubt of the appearance of empiricism at times in our practice; but its scientific character is progressing and becoming more elaborated every season, and assuming a uniform shape among us. But as far as those around us comprehend it, the case is often very different, and it has been well said “that the public have not as yet disabused

* Presidential Address delivered at the Annual Meeting of the West Somerset Branch of the British Medical Association.

themselves of the old time notion that the doctor is a man of pills and potions, of bandages and amputating knives."* The doctor as a sanitary practitioner is a conception not understood by the majority. And in this I take it lies an explanation of the position which the public are frequently only too ready to assign to us. A position such as we do not feel disposed to acquiesce in. No one could desire a better instance to show how keenly alive medical men are to *status* than the one which cropped up last year in the columns of the British Medical Journal, where week after week letters appeared bearing upon the social relationship of medical practitioners.

Great questions affecting the dignity of the profession are annually discussed by authors of inaugural addresses, delivered at the opening of medical sessions, and it would be but waste of time in me to go over the same ground, or appear to compete with them. But in looking round and gathering, as it were into a focus, my limited experience of life, I am sometimes tempted to ask, What really do the public think of us? as well as what we think of one another! Is the position of the medical practitioner—that is, the estimation as such—the same or similar in all parts of the kingdom? To this last I am inclined to say no, judging from what I have personally observed as well as what I have learnt from others. It strikes me that the medical practitioner occupies in Ireland, and also to some extent in Scotland, a better social position than he does in most parts of England.

In those divisions he takes as a matter of course, in virtue of his profession, a similar position to that which common custom concedes to beneficed clergymen in these parts. True, here, any one may, most, no doubt, do command any society they desire; but the doctor has to win it,

* Mr. Netten Radcliffe.

while the clergyman has it accorded him at once. One reason for this may be found in the following reply which I received from an Irish friend* to the question—Why do members of our profession hold a higher social position in the rural and semi-rural parts of Ireland than in England? He says, "It was simply due to a different condition of Society in Ireland up to 20 years ago or so, and which is now passing away. In Ireland there was no grade representing the lower middle class of England—in fact any middle class was difficult to define. Broadly there were only two classes—aristocracy, land holders, or descendants of land holders, and the peasantry. The aristocracy, or land holders, held the entire patronage of the country—legal, medical, clerical—as well as direct government offices," and provided for the younger members of their family in this way, by training them for one of the professions in which they would be sure of a berth; but since the great increase of general education afforded by the Queen's Colleges, the sons of small farmers and traders enter the professions now, and, as elections to appointments are conducted more after the custom in England than used to be the practice, they prove formidable competitors to the hitherto favoured class, with the result, as my friend puts it, of lowering the social status of the doctors, especially in rural districts. In Dublin and the other large towns the profession holds as high a position as anywhere in the kingdom. Next to that may be taken Edinburgh.

The reason that the social status in Scotland is on an average higher, is, I take it, on account of the culture of the people generally being superior to what it is, as a rule, in England.

But things are in a state of transition, and year by

* Mr. J. Berry White.

year the doctor is assuming a position among the general public more befitting his severe training and culture.

Those among us who remember the social position of medical practioners 25 or 30 years ago, in times before the passing of the 1858 Medical Act, assert, as Dr. Andrew Wood and many others have done, that the medical profession has advanced immensely in public estimation. The doctors are learning more and more how to be true to themselves, and this education redounds manifold to the good of the public. And it is no less true that the public are becoming more and more educated and capable of appreciating medical culture and practice.

But in spite of all we now and then meet with curious anomalies. A friend observed to me the other day that in London—it may be true of other large towns as well—the ordinary family medical attendant is not in *Society*. Society only knows him professionally. The why and wherefore of this exclusion I cannot give, but it reminds me of what I read some time ago in a novel about society in some parts of France. A lady being asked about the *curé* of the place said she did not ask him to her parties as it would be embarrassing to see one's confessor in that way.

Novelists are not so ready now to hold up a doctor to ridicule as they used to be. There is greater danger of his being run as a hero than that. Still, despite a little exuberant granulation traits, the profession readily acknowledges the kind expressions of Kingsley, George Eliot, and others.

In these days there is a spirit abroad which seeks to reduce everything to its actual necessity, to what it is worth. Well, let us apply this to our ourselves, and to the community at large at the same time. Lop off

superfluities, however dear they may be to society ; and when you have done so, you have left a simple social organisation very similar to the Russian Mir, or Indian village commune.

These are consistent with high civilisation, but I do not mean to say that they have yet attained it. There is as good a prospect of the ideal city of Hygeiapolis getting its mansions reared on vaulted arches in such a canton as among more familiar political systems.

One can have no difficulty in considering the presence of an established church unnecessary in such a place, nor would a special priesthood be of primary importance. And much the same thing might be said of Law, as a special profession. People in all their material requirements could do without them as they could without special military establishments.

But what of medicine ? Why this—Since it is impossible for all, or even many, to acquire proficiency in the calling, it would be unnecessary and detrimental to the general good to attempt such a thing, it follows that a few must be set apart for the duties, and the aptitude of these to cure diseases and injuries would constitute the ground of their existence among people.

The community being essentially one of people who worked—taking labour in its broader sense—the doctor would fairly take his place there as one of them, that is, as a working man, and a material contribution to the common weal.

If this line of argument be tenable, it follows as a natural sequence that the doctor would hold a place in intelligent public estimation second to none.

But what do we observe now ?

In the formation of social status, in other words, the evolution of social grades, the main influencing element

does not appear to have been cultivated intelligence, but something else. The aim has been to so impress men as to secure their awe or esteem. To this end the church seeks to attire her ministers in special garments, and to attach to their names titular distinctions of a revered nature. It is necessary in the state of society that this should be so; at the same time the fact remains that it is only an appeal to the vulgar and ignoble side of human nature. The arrangement, we all know, is a survival of a state of things from prehistoric times. The reasoning faculties are slow of development, while the emotional appear early in nations as well as in individuals.

Further, no doubt in the interest of the common welfare, ecclesiastical society has by statute secured the first place among us in social position. It has, as I said, been deemed good for men that it should be so, as the church could do the work for which it was designed more fully and efficiently in virtue of these aids.

Next, as to law and the legal professions, we find its members also, when in discharge of their high offices, specially arrayed with the view of producing an impression upon lookers on; their names, in certain grades, also bedecked with appellations indicative of respect and awe, with their position as seconds in precedence secured by legal enactments.

In both church and law there seems to have been a dread of too familiar a contact with the masses, while ever planning to secure the reverence of these masses. The Psalmist of old appears to have hit off this action in an especially happy way—"So long" says he "as thou doest well unto thyself men will praise thee." Both, in bygone days, but less so now, fulfilled their duties best by surrounding themselves with a certain amount of pomp and display, and jealous guarding of place and precedence.

But in medicine things are different. True, there is an old decree of Henry the Eighth's time, assigning to physicians a place in the order of precedence above that accorded to barristers ; but whether that distinction has been of any value to medicine I have never heard. Illness makes short work of pretence and display. The doctor has little call for the aid of legislative enactments to do his work and secure esteem ; at all events among cultivated people.

The greatest number of one's acquaintance, however, are not of this description ; but be that as it may, a very natural feeling asserts itself at times : namely, the desire to obtain the approbation and encouragement of those around us, a desire which we only share with those engaged in other avocations.

Time was, and that not long ago, when men of science or intellectual culture obtained very little popular applause. This was reserved in full measure for warriors ; but now these draw less, while science and arts draw more and more. Most thinking people are now alive to the truth, that the so-called glories of war are attractive and captivating when war is far away. 'Tis distance that lends to military life much of its glory : close at home it is hateful. How different is the case in medicine. It is emphatically at home where its value is appreciated ; and it is nowhere hateful, not even far away.

Descartes predicted long ago that all great movements in physics, morals, and even good government, would be evolved out of the medical sciences. The physician in his day held a *status* apart from the generality of men ; an impassable gulf was supposed to separate them, and when the learned spoke the commonality did but wonder and listen ! As to understanding, that was another thing. They, the physicians, were as giants in fable—

something to wonder at. But since then, Browning's brief prayer—"Make no more giants, God, but elevate the race at once"—is being heard. We, in our day, know nothing about impassable gulfs or status apart. Dr. B. W. Richardson, in an address of his published not long ago, says—"And yet, gentlemen, there was after all nothing but what was natural and probable in the prophecy of Descartes. It is perfectly true that we, as a fraternity, are, or ought to be, engaged in studies, and pursuits so sublime and so intimately connected with every incident of this mortal life, that we should be in the fullest sense a first power amongst mankind. So closely connected are our pursuits with the heart and soul of all that lives, that if we had no ambition, no passions, no desires, we ought by our very work to stand in the first ranks of mankind. Respect, profound and persistent, should be paid to our work if not to our workmen, and yet our best work is, as a rule, known only to ourselves."

Never a man penned truer words than these, only we do but little good in indulging in a sort of Jeremiad over the situation. The fault is all due to general absence of appreciation and cultivated intelligence among those around us,—in short it may well be said of them, they know not what they do. Mr. Carlyle in one of his discourses laid it down that of all orders amongst men, that one should have precedence which governs them, keeps them in harmonious relationship with one another, and so orders affairs as to secure the greatest good, the best relationship which a man can have to his fellow; not omitting ceremonials and religious rites—in a word, the king or his immediate representative.

In this we all readily concur. Society has so ordered things from time immemorial. But what of man's

relationship to nature, animate and inanimate, chemical and physical actions which surround and impress him with various influences from the commencement of his existence?

A community's political condition may be admirable, leaving in the opinion of old style statesmen nothing to be desired, and yet if it is not taught its correct relation to the physical and chemical influences which incessantly present themselves, its members are but like the blind among pits, always in danger and often suffering.

When man shall have secured for himself good government, he requires next, if not before, to know the way to live healthy, and to recover from ailments and injuries which in the natural course of things are unavoidable. What place is to be assigned in the new ideal order of precedence to the men, or the vocation which tends to secure this.

No one here need be told that to attain anything like proficiency in the calling, demands great brain work and outlay of time. No one heard of a doctor becoming eminent at a moment's notice, I mean real greatness—that eminence which stands the test of co-workers' examination, not cheap clap-trap applause. But among warriors men have sprung into fame at a bounce, and such a thing is not unknown in ecclesiastical and legal careers; but in our case we have to do with nature and nature's laws, and they are not to be taken by surprise, and never have been.

Following on then this train of thought, it seems to me but a fair inference to say that whilst the great empires of old attained power and vast sway, they did so partly in virtue of force, but partly also in virtue of political organisation. In spite of all they have passed away and many of them are little beyond names to us these days.

They failed primarily, I take it, because their leaders of men did not comprehend the relation of man to matter, and knew not how to sustain a people's vitality and strength. The uses of what in our day is known as *state medicine*, was like a sealed book to them. Wealth increased, no doubt, gravitating to the few; but men decayed with little let or hinderance.

The modern survivals of these empires, as they are here and there met with in different parts of the world, show side by side, grandeur and filth, airy palaces, often of exquisite design and foul odour, while the pompous *Hakim* of the court stalks along as if he and those he ministered unto were beings beyond the reach of poisonous air and water. His representative in Europe would be he who lived apart from the commonality, and was separated from them by an impassable gulf.

At this stage one feels face to face with one of the most vital questions of our time. We have evidence that force and ordinary political organisation are not enough to sustain a nation's health and energy, and the question is fast becoming a household one, namely—What is to be done with that mass of people of degenerated and perverted vitality which is ever on the increase in our country? It must have been some such weight as this which swamped historic kingdoms of bygone days. Must we also succumb to it? We trust not, and we base our trust first upon the fact that there is a more general culture among all classes than there used to be, and next upon the aid which medicine is able to afford rulers. Through these, but more especially through this last, the evil may be averted.

In England, as well as in other civilised countries, the aid which medicine renders government, is of incalculable value. Through medical research, the natural history of

many a disease is laid open. Diseases which formerly devastated places, and used to be looked upon as supernatural visitations, are now brought within comprehension and shown to be preventible disorders.

The members of our profession associated with the Local Government Board, as well as the large body of observers connected with them throughout the country, take notice also of that border land of sickness, that is, pauperism in town as well as country; and the measures taken to try and re-invigorate the offsprings of town pauper by assigning them to healthy country places is one likely to commend itself.

We are all familiar with the character of the industrious apprentice, who, in spite of difficulty, eventually succeeds in attaining any post he sets his mind upon. He represents a phase of national character of which every country is proud; but there is a sameness in these stories, and the real variation of character among them is slight. What of the opposite? The reversion of type—that tendency which is for reverting to some long forgotten trait in family history. This is what comes under the cognizance of the medical profession, and will be found more prolific in varieties than the first. The question of heredity has been again and again studied in relation to varieties advancing from one grade to a conceivably higher one. But of the retrograde course we have very little beyond mere fragmentary pieces of information. It is out of this class that the eccentric characters, the disease, so to speak, of society is derived; which as time rolls on constitutes a difficult problem for state medicine to solve.

It is to us as a special profession that the main share of this work will be relegated, and I venture to think that when fully trusted we shall be found equal to the demands made upon us.

Passing from the consideration of our relations in a general way with the public at large to a more special relationship, that is, our position with regard to our patients, I cannot better express that relation than in the words of Professor Donders, who said—"There is an art of a superior order, which is neither the offspring of science nor of technical art; but which manifests itself in both, and gives them that stamp which we admire in purely æsthetic masterpieces. In our sphere this art seems to enter into regions that are inaccessible to our senses; it manifests its power, not merely by material means, but also by words which find an echo, by a look which inspires confidence, by an expression of sympathy which becomes a benefit, I mean the intuitive identification with the patient." "It is of a superior nature; it is a divine gift that cannot be communicated to others, or rendered more perfect by discussing it."

There, gentlemen, is a picture, an æsthetic masterpiece itself from the pen of the venerated Belgian professor. I know no one who can add an improving line to it, and any amplification can only result in a blur; but this, however, I may venture to say, that I believe every man here can bear witness to the truth of the sentiments depicted in that picture. It comes as a touch of nature and makes us all akin.

Of our relations to one another I have little to say, as my experience has been too limited; but this is admitted on all sides, namely:—that it is infinitely better than it ever has been before, and it is becoming more and more cordial, thanks to such associations as this.

Thackeray writing of literary men, said "It is because we know and respect each other that the world respects us so much." And that is our cue also, and such conduct is manifestly more and more apparent among us year by

year. But still much remains to be done, especially in semi-rural districts like the ones we are living in. It would be better, I contend, if there was still more social intercourse between medical men. We can hardly do better in this respect than imitate the habits of our clerical brethren; a leaf from their book would be a guide to us.

I mentioned just now that after all, as Dr. Richardson says, and it has often been said before, our best work is only known to ourselves. Thanks to a meeting of this kind, one has a chance of an encouraging word of praise for a good act done or a good thought expressed; or a friendly advice or admonition for a faulty one. If it were not for such discriminating approbation as we meet with from one another, the incentives to real good acts rather than mere plausible ones would be few.

No doubt, many of our brethren complain that their quota of reward and praise, are at times perversely withheld from them by the powers that be. In this, at all events, we only show that we are part and parcel of the community at large, and have no seeking apart from it, and there cannot be a doubt, we should all view with aversion, any proceeding tending to sever the interest of medical men from that of the people. I mean any actions which might force us into an *imperium in imperio* position in society, such as that which characterised isolated social orders in days gone by. But there is little to fear from this according to present indications. At the same time it is as true of distinguished men among us now as it ever was, that the praise which they value most is that which comes to them from members of their profession: state acknowledgment and distinctions being secondary.

I might adduce any number of instances to show that we, as a body, are always ready to utter our plaudits and our grateful thanks to any one, who by patient labor

indicates to us an improved method of relieving suffering or preventing disease.

The hearty cheers given to the real worthies among us at our great annual gatherings are, I have no doubt, an encouragement and a recompense to them, as well as an incentive to younger men. Dr. Sayre, of New York, I venture to think, experienced all the satisfaction of a conquering hero from the manly cheers which were accorded him by some hundreds of his brother practitioners at Manchester a few years ago. The value of the cheering is enhanced when we reflect that the cheers came from men, each one of whom was a competent judge of the work exhibited. But perhaps the reception given last year to Mr. Lister, at Amsterdam, by the members of the International Congress, takes precedence, by all accounts, of any similar greetings given by medical men to a fellow worker.

The report of it, as given in the columns of the British Medical Journal, makes one proud of the profession, which so signified its approbation of the acts of a worthy member.

And the words of the President of the Congress, Professor Donders, in addressing Mr. Lister at the time, were in every way worthy of the occasion. "Professor Lister," he said, "it is not only our admiration which we offer you, it is our gratitude and that of the nations to which we belong." The gathering on the occasion was composed of men of eminence from every civilized nation, and they testified their appreciation of a good done to mankind.

I have only to observe in conclusion that it is cheering to think, since it is true, that much of our best work is only known to ourselves, the circumstance, when we think of the above, need not have any depressing effect.

CASES OF TUMOUR OF THE BRAIN IN THE INSANE.

BY THOMAS WYLE, M.D., BOROUGH ASYLUM, BIRMINGHAM.

TUMOURS of the brain amongst the insane are so very rare, that I think any clinical record of such cases cannot be without interest, not only to the medico-psychologist, but also to the general practitioner. I will, therefore, bring before your notice two cases of tumour of the brain, one of which came under my care in June, 1879.

T. H., admitted 30th June, 1879, from his own home. Age 40, married, occupation, a boatman on the canal. First attack. His wife states that he has always been a very steady, respectable man. About six months ago, one day, while at work, he fell off the boat into the canal, and was nearly drowned before assistance could be rendered him; after he was taken home, it was found he had lost the use of his left arm and leg; he remained at home from that time until he came to the asylum; when admitted into the asylum he had regained the full use of his paralysed side. There is no history or symptoms of syphilis. His wife also states that during the last six months he has been quite changed in his habits, that he is now irritable and gets very excited at times, occasionally destructive.

June 30th, 1879.—When admitted he was in a very restless condition, general incoherency and rambling in conversation, neither knew where he came from nor where he was.

July 1.—Patient rested and slept well last night; seems very confused when any simple question is put to him, and is sometime before he can give an answer; muscles

of face and lips tremulous, and when asked to put out his tongue it is done with a jerk, and quivers while protruded ; his memory is very defective ; when asked how long he has been here, says "a month," when in reality he has been only one night. Pupils slightly unequal but both active. Examination of chest showed heart and lungs to be healthy ; complains of pain in his head.

July 20.—Had a convulsive attack to-day, after which it was found his left side was paralysed, and the pupils were markedly unequal ; complains of pain in his head.

Aug. 24.—He has been rather helpless since last note was made, and been confined to bed, yet he keeps in the very best of spirits ; when asked how he is, says he feels "very well," repeating the words "very well" ; he sings occasionally, and talks a good deal of the fine boats he possesses, and addresses strangers by some familiar name such as "Joe ;" labours under the delusion of mistaken identity, and holds out his hand to shake hands with strangers, believing he has known them all his life. Takes his food well and enjoys it.

Nov. 20.—Very little change since last note was made, unless it is that his voice is not so strong, and is very tremulous when he speaks. He takes his food well, but it does not do him the same amount of good it did, as he has lost flesh lately, showing that nutrition is becoming impaired.

Jan. 8th, 1880.—Generally very happy and content although he is quite helpless ; has to be lifted out and into bed ; bed sore forming over the sacrum ; pulse 86 ; urine examined was healthy.

Feb. 3.—Sank and died.

Feb. 4.—*Autopsy*.—Body thin and emaciated ; there was a large bed sore over the sacrum.

Head.—Calvarium normal in thickness. Dura mater

very firmly adherent to the skull-cap, considerably thickened and had a leathery feel, arachnoid slightly opaque, with some sub-arachnoid effusion. The brain substance was highly vascular, and presented a pinkish aspect. On taking a slice off the right cerebral hemisphere of the brain, a tumour was found, of a greyish colour, occupying the greater part of the right anterior lobe, and extending backwards about three inches; the tumour was the size of a medium orange, irregular in shape, and somewhat uneven on the surface, with two or three small cysts attached to it; it was supplied with small vessels from around it; the brain substance in the immediate neighbourhood was very soft and pulpy, and had a cream-like appearance. The corpus striatum and optic thalamus of that side were much softened and broken up. Softening had just commenced on the left side. The floor of the lateral and fourth ventricles were rough with small granulations, as seen in an ordinary case of general paralysis. The other organs were healthy; weight of brain 44 oz.; blood vessels of brain thickened.

Microscopical appearances of tumour (by Dr. Saundby, who kindly undertook to examine the tumour for me). Portions of the tumour were prepared by soaking in bichromate of potash solution, syrup, and gum. The sections were stained with logwood (Dr. Cook's formula). The tumour was composed of two portions, a hard and a soft portion, the former was made up of homogeneous material, staining only slightly and diffusely, containing many capillary vessels with enormously thick walls, and presenting the appearance of lowly organised newly formed tissue, which had undergone caseation. The latter was the growing portion, consisting of groups of round and spindle cells, and a number of capillary blood vessels. The appearances were suggestive of the growth being an old gumma.

Case II.—In the obituary record of this asylum I can only find one case of tumour of the brain, which my colleague, Mr. Green, met with some years ago, and so far as he can remember, it is the only case he has met with.

The case was that of a man (E. B.), aged 40, an upholsterer, married, subject to epilepsy. He is recorded to have been a man of average height, and bilious temperament; has been gay and dissipated. When admitted he was unable to stand and nearly unconscious, pupils sluggish, but of equal size; can be roused, but not easily; countenance pale; cannot be made fully to comprehend what is said to him; to every question he answers "yes," or "not at all;" speaks slowly, as if he had a difficulty in articulating.

This patient only lived 14 days, during which time he is stated to have had delusions as to his great wealth; memory very defective, and circulation languid. He is only stated to have had one fit, and that was the day before he died. His wife says his mind was more or less affected for seven years before he was sent to the asylum, and that he was almost blind for a year during that time. It was also stated that his right side was weaker than the left, as he used to assist to dress himself with the left hand, but not at all with right, although he could move it.

Autopsy.—In the upper part of the left hemisphere of the brain, close to the longitudinal fissure, and just under the coronal suture, was a large fibrous tumour, weighing $5\frac{1}{2}$ oz., resting upon, but not reaching, the lateral ventricle. It was irregular in shape, and nodulated on its surface, and the brain around it was softened; the veins proceeding from the tumour and the lateral sinus, in which they terminated, were filled with a firm, dense, fibrinous coagulum; the whole brain was highly vascular.

Tumours amongst the insane are rare, but the experience of different authors has varied, as may be seen from the following:—Fischer found not one case in 318 autopsies. Dr. Batty Tuke, out of 400 autopsies of the insane, found himself in the same position; but he says on three occasions he has met with gliomata in the sane. Dr. Hack Tuke found one tumour in 400 cases. The French statistics show 22 out of 8,289 cases. In the Somerset County Asylum tumours were found at the rate of 16 per 1,000. Dr. Sutherland mentions that he found four in 200 cases. Dr. Clouston was more fortunate in this respect, as he found at the Carlisle Asylum six cases out of 214, while this is the first case I have met with out of 400 autopsies.

Dr. Clouston, in a very interesting paper on this subject, in the *Journal of Mental Science*, July 1872, says, that Arnold quotes Morgagni and Bonetus; that tumours are one of 47 pathological changes in the brains of the insane.

Certain authors have expressed doubt as to whether tumours of the brain are really productive of insanity, their objection being founded on the fact that in certain cases tumours have existed which have not been accompanied by abnormal psychical symptoms. I agree with Dr. Batty Tuke, that there is very little doubt that tumours of various descriptions are productive of insanity, producing mental weakness, and in some cases even dementia in its deepest colour. I think the symptoms generally to be met with are excitement, followed by some kind of seizure, it may be apoplectic, then defective memory, and obtuseness of the intellect. In both the cases I have related, there were allied symptoms, such as those of an apoplectic character at or near the beginning, followed by delusions of grandeur and wealth, as seen in general paralysis of the insane, then defective memory.

I cannot, say, therefore, that in my case the patient was free from delusion as laid down by some ; headache was complained of throughout my case, and in four out of Dr. Clouston's six cases.

Then in the two cases I have brought forward paralysis was present in the form of hemiplegia : this agrees with a case related by Dr. Bacon. Paralysis was present in some form or other, in four out of Dr. Clouston's six, but paralysis does not follow as a matter of course, because a tumour is present in the brain. Calmeil found that three-eighths of those affected with organic disease of the brain were free from paralysis and of the other five-eighths paralysed he found four-eighths hemiplegic.

Dr. Boyd has compared the frequency of tumour in the sane and in the insane, and finds out of 38 cases, 17 showed symptoms of insanity, which agrees with Calmeil, but I cannot help thinking this is much too high a percentage, and that a very great number of cases are treated at home, and we hear nothing about them ; it may be only looked upon as ordinary softening of the brain.

In conclusion, the two cases I have related strongly corroborate the excellent paper by Dr. Clouston on this subject. As regards the pathological influences exercised by tumours growing in the brain, he says, they have three distinct effects on the brain structure. 1st. They create irritation tending to ramollisement in the nerve substance with which they are in contact. 2nd. They cause pressure on distant parts, which in its turn causes an alteration of the structure and nutrition. 3rd. They set up progressive disease, resulting in an increase of the connective tissue and thickening of the coats of the blood vessels.

REPORTS OF CASES.

GENERAL HOSPITAL.

TYPHOID FEVER, SHIEWING THE ANTIPYRETIC EFFECT OF SALICYLATE OF SODA (*under the care of Dr. Russell*).—Albert Hems, aged 19, admitted into ward 21, on July 14th, 1880, having been ill ten days.

Family History.—Father died from typhoid fever four years ago.

Personal History.—Has never had any serious illness.

History of Personal Attack.—General surroundings at home good; is not aware of having been exposed to any infection. About ten days ago he began to feel low and listless, with headache, thirst, and constipation. Three days later he went to bed, and has gradually got worse.

Present Condition.—Expression of face dull and listless; appears tired and languid. Lips covered with sordes; tongue dry and red at edges, centre covered with dark brown fur; complains of sore throat, thirst, and loss of appetite; bowels not opened for a week; urine of fair quantity; no headache; often has pain in bowels; vomited once; a slight cough. Pulse 100, fairly strong; heart sounds very soft, no murmur; lungs normal; spleen slightly enlarged; abdomen swollen and tender, especially in left iliac fossa; a few spots over chest and abdomen. Temp., V. 105·2, M. 102·4; resp., 20.

Ordered R.—M. Camph., 3ss., t.d.s.

July 15th.—A soft faint mitral murmur was heard. Temp., M. 102·8, V. 105.

17th.—The murmur was still audible; as the morning temperature was 103, and the murmur suggested apprehension of continued high temperature, a bath was ordered at 12.15. The temperature before the bath was 104·2, and one hour after the bath it had fallen to 98·2. There was much shivering and considerable depression, so that it was determined to try the effect of salicylate of soda before having recourse to the bath again. Evening temperature, 103·2.

18th.—Ordered R. Soda salicyl. gr. x., every two hours. Temp., M. 103·2, V. 102·9.

19th.—Temp., M. 99·8, V. 101·5. Since taking the salicylate of soda the patient has slept well, though previously he was sleepless. Taking a teaspoonful of brandy every hour. Bowels opened after enema.

20th.—Pulse very yielding; has slept well; ordered to discontinue the salicylate. Temp., M. 100°2, V. 103°2. Bowels opened by enema.

21st.—Much the same, but as the temperature went up last night he recommenced the salicylate at 9 a.m., and continued to take it every three hours from nine o'clock this morning. Temp., M. 101, V. 102.

22nd.—Great languor; eyes heavy; sleepy; tongue dry; cardiac murmur not audible, first sound very faint; pulse 100, tremulous, very yielding; no delirium; a few spots continue to come out; abdomen rather full but not tender; sleeps a good deal. Temp., M. 102°6, V. 102°8.

23rd.—On account of the evident feebleness of the heart the salicylate was stopped, and 2 grs. of sulphate of quinine ordered every four hours, but as the temperature rose at 3 p.m. to over 103, the salicylate was resumed every three hours, and at 9 p.m. the temperature had fallen to 101°4.

24th.—Pulse yielding but steady, 104; 1st sound of heart rather more distinct; bowels were opened during the night; tongue very red, but less dry; head clear; abdomen distended; a teaspoonful of brandy every hour. Temp., M. 102, V. 103°5.

25th.—Patient lies on his side and appears comfortable; bowels open; very red and dry tongue; no delirium; has been sleeping well till last night; the salicylate was ordered every second hour, and the brandy to be continued. Temp., M. 102°2, V. 102°6.

26th.—Decidedly improved in appearance; has slept fairly; one liquid stool; no deafness; pulse 78, firmer and fuller; first sound of heart distinct, no murmur; splenic dulness nearly normal; some fresh spots; tongue more moist and less red. Temp., M. 102°5, V. 103.

27th.—Temp., M. 101, V. 101°6. Two loose stools.

28th.—Temp., M. 101°2, V. 101°4.

29th.—Temp., M. 100°6, V. 102. Medicine was discontinued after 9 a.m.

30th.—Temp., M. 101°8, V. 102°2.

31st.—Temp., M. 100°6, V. 101°2.

August 1st.—Temp., M. 98°6, V. 98°6.

Patient was discharged on September 8th.

Remarks.—No one who carefully follows this record of the case, can fail to notice the marked manner in which the salicylate of soda controlled the tendency to pyrexia, a relation which is however better manifested in the chart of the temperature taken every three hours.

MEDICAL NEWS.

WOMEN AT MEDICAL CONGRESS.—Decidedly our English brethren are not very gallant or very liberal. We can understand that they are not friendly to the practice of medicine by women, and we ourselves have said distinctly that we do not believe it to be, generally speaking, a fitting profession for them. But when a woman, at her own risk and peril, for motives of which she is the only judge, has thought fit to embrace this profession, when she has acquired, under the same conditions as a man, the title and the diploma of doctor, what reasons can be produced for refusing her the rights and privileges attached to this title and diploma. Doubtless the honorable gentlemen engaged in organising the future International Congress at London have very good reasons when, by a majority of 27 to 19, they decide to exclude lady-doctors. They have certainly excellent reasons when they extend this ostracism even to those who have taken part in other international congresses. Does the experience of the past justify these alarms and precautions? Alas! if they wish to exclude talkers, the inexhaustible speech makers who speak with nothing to say, they must have recourse to more radical measures, and, perhaps, the rigour of the new regulations would fall, not seldom, upon bearded orators. In France, on salic soil, we are less timorous. The Société d'Anthropologie receives women among its members, and does not compel them to maintain silence. The English Committee of the International Congress of London, which Her Majesty the Queen of England and Empress of India has deigned to take under her high patronage, might, without derogation, have shown more courtesy to the sex to which that sovereign belongs.—*Le Progrès Médical.*

New Books, &c., Received.

1. The Chinese Medical Review. Vol. II., No. 3.—2. The Anatomy of the Joints of Man. By HENRY MORRIS, M.A., M.B., Lond., and R.C.S. London: J. and A. Churchill.
3. Malaria: Its Causes and Effects. By E. G. RUSSELL, M.B., B.Sc., Lond. London: Thacker, Spink, & Co.—
4. On Atrophy of the Stomach. By SAMUEL FENWICK, M.D. London: J. and A. Churchill.—5. Le Concours Medical. No. 39.

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